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# ADDRESSES AND ORIGINAL ARTICLES

## ELECTROSURGERY *

BY ARTHUR H. BURGESS, M.Sc. Vict., F.R.C.S. Eng., F.A.C.S. (Hon.), LL.D.

HONORARY SURGEON TO THE MANCHESTER ROYAL INFIRMARY; PROFESSOR OF CLINICAL SURGERY IN THE UNIVERSITY OF MANCHESTER

HIGH-FREQUENCY electric currents have been used for many years for the destruction, by coagulation, of malignant and other neoplasms; but my interest in their employment for the section of tissues, in place of the scalpel, was not excited until a visit, in 1923, to the clinic of Prof. Gosta Forssell, at Radiumhemmet, Stockholm. There I saw the cancerous breast, with its overlying skin and underlying muscles and fasciæ, widely excised with the "diathermy" knife, but without any undermining of the skin flaps such as is usual in the modern "radical" operation for cancer of the breast: the extensive wound area thus exposed on the chest wall was then coagulated with a large flat electrode, and the coagulated tissues were left to become separated by nature, no attempt at closure of the wound being made. After their separation healthy granulations appeared and the wound healed by second intention, but only after many weeks. On my return I used the diathermy knife with increasing frequency for the excision of malignant growths, chiefly in the breast, tongue, mouth, pharynx, and rectum. In the breast I soon omitted the coagulation of the chest wall with the flat electrode, and used the diathermy knife much as I had formerly used the scalpel, undermining the skin for the usual distance, and suturing the skin flaps together at the conclusion of the operation. Primary union was usually obtained and the long delay in healing, inevitable in the Stockholm technique of that day, thereby avoided.

It was during a visit to the United States of America in 1927 that I first witnessed the use of the three-electrode thermionic valve in place of the spark-gap in high-frequency apparatus, with its superior "cutting" qualities. I purchased one of the American machines and in order to test thoroughly its possibilities I used it for two years in all my hospital and nursing-home operations—eliminating entirely the scalpel and using scissors only for the cutting of ligatures and sutures. It is on the foundation of this and subsequent personal experience that I base the opinions here expressed.

### Varieties of Heating Current

It has long been known that when an alternating electric current of low frequency—such as the "50-cycles per second" current of most of our municipal electric mains—is applied to the animal body, certain physiological and chemical effects are produced causing hydrogen-ion concentration within the tissues and resulting in a degree of shock that may prove fatal, muscular contraction being a marked feature. d'Arsonval, in 1890, discovered that if the current be reversed more than 5000 times per second the muscular contractions became progressively feebler until at 10,000 per second they ceased altogether, after which the only effect produced in the tissues was that of heat. He did not himself recognise the practical value of this heat, and spoke of it as "chaleur désagréable," and it was left to Nagelschmidt, in 1897, to apply it therapeutically. This frequency of 10,000 is usually accepted as the dividing line between low-frequency and high-frequency currents, although very much greater frequencies are now used—even many millions per second. It has yet to be proved, however, that these extreme frequencies have any practical advantage, and a frequency of from one to five millions will suffice for all general surgical purposes. This high frequency of alternation ensures that the time of passage of the electric current through the tissues in one direction is too short to permit the development of the physiological effects associated with low-frequency currents, since such, at their inception, are immediately neutralised by the passage of the current into the opposite phase. That to the frequency of the *alternations* and not to the frequency of the *interruptions* is due the absence of these physiological effects has been proved by Cluzet and Chevalier[1]: by means of four radio-transmitting valves arranged in series they abolished one half-phase of the alternations, thus rendering the current unidirectional while at the same time keeping its interrupted character, and under these conditions they found that muscular contractions occurred and even tetanisation of the muscles. The sole purpose, indeed, of the "high" frequency is to ensure, with greater certainty, the avoidance of all those physical, physiological, and chemical effects which are inseparable from "low" frequency, with the exception of heat. The heat generated is due to the resistance of the tissues to the transit of the high-frequency current, and since it is created entirely within them it is sometimes referred to as "endothermy." The degree of heat can be carefully regulated from the gentle heating of large portions or even the whole of the body, such as is required in "medical diathermy" to the intense heating with its localised destructive effects required in the various types of "surgical diathermy"—fulguration, dehydration, electrocoagulation, electrosection. This heat is produced by the friction of innumerable ions oscillating within the tissues, and it is upon the variations in its intensity and especially in the rapidity of its creation that the different effects upon the tissues—dehydration, coagulation, or section—are brought about.

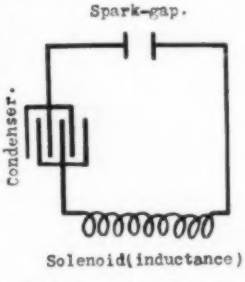



FIG. 1.—"Oscillating" circuit.

The apparatus for producing these high-frequency currents may utilise either a "spark-gap" or a "three-electrode thermionic valve" (designated "triode valve" for brevity). The spark-gap type was that originally employed, and an essential component of such an apparatus is an "oscillating" circuit, consisting of (1) a condenser, (2) an "inductance" or "solenoid," and (3) a spark-gap (Fig. 1). The condenser is charged, usually from the alternating current mains, the voltage of which—230 volts being standard for this country—is first greatly increased through a "step-up" transformer (Figs. 3 and 4). When the charge upon the plates of the condenser reaches an intensity sufficient to overcome the resistance of the air-space in the spark-gap, the current flows across the gap in the form of a spark

* The Bradshaw lecture delivered at the Royal College of Surgeons of England on Dec. 14th.

which, although appearing to the eye as a single spark, is in reality, as can be shown in a rapidly revolving mirror, a succession of sparks in opposite directions, the current surging forwards and backwards alternately—i.e., it is said to "oscillate." Owing to the losses of current caused by the resistance of the circuit and of the air-gap, the extent of the oscillations progressively and rapidly diminishes, and they disappear altogether in from six to ten sparks; the voltage, which was very high at the start of each train of oscillations, becomes very low at the finish, so that the tension of the current is constantly varying. Such oscillations are said to be "damped" (see Fig. 2). The whole train of oscillations occupies about 1/50,000th of a second, and is finished well before the half-cycle of the alternating current (50 cycles per second) is concluded. In fact, in the time (1/100th of a second) occupied by this half-cycle there is room for numerous recharges and redischarges of the oscillatory current (see Figs. 5 and 6). We are thus confronted with two aspects of frequency: firstly, the number of actual oscillations in each group during each spark discharge; and, secondly, the number of such groups that occur in each half-cycle of the alternating current from the mains—i.e., the frequency with which the condenser discharges. Since there is a definite interval between each train of oscillations during which no current flows, these oscillations are said to be "unsustained." The wider the spark-gap the greater is its air-resistance, and the longer the time taken for the condenser to become charged sufficiently highly to bridge the gap; the frequency is thus lessened as is the amperage, but, on the other hand, when the current finally succeeds in bridging the gap

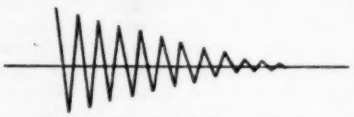
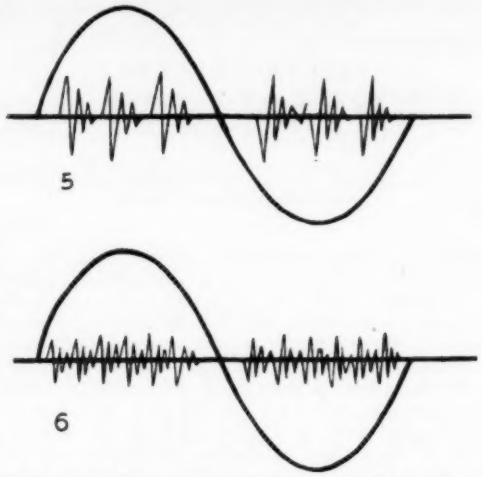


FIG 2.—"Damped" wave-train.




FIGS. 5 and 6.—Fig. 5, "damped" and "unsustained" wave-trains. Fig. 6, "damped" and "sustained" wave-trains.

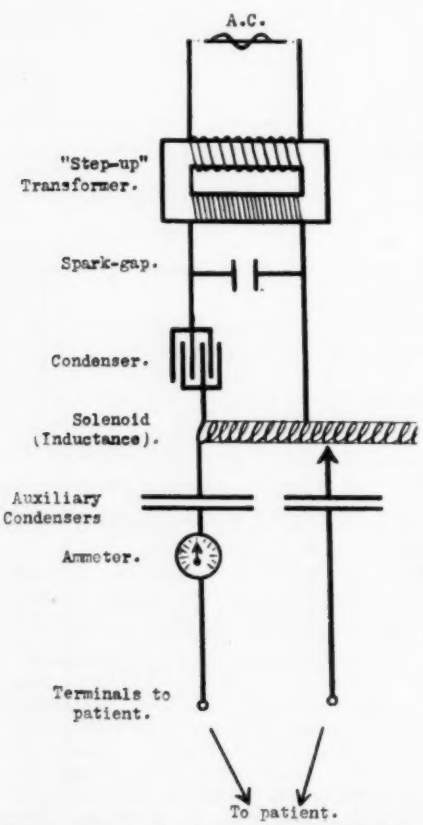



FIG. 3.—Plan of "spark-gap" H.F. apparatus for "surgical" diathermy.

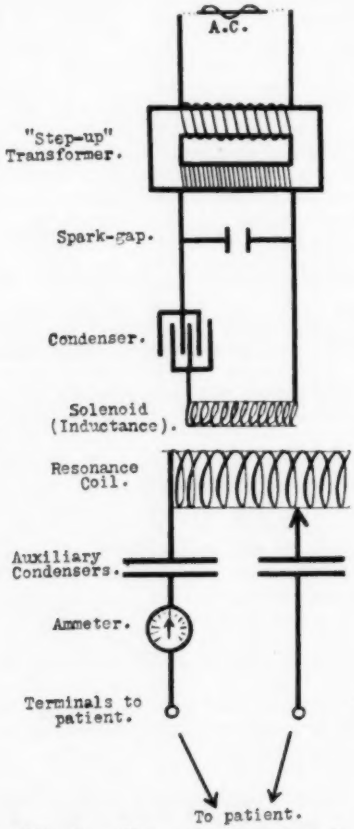



FIG. 4.—Plan of "spark-gap" H.F. apparatus for "medical" diathermy.

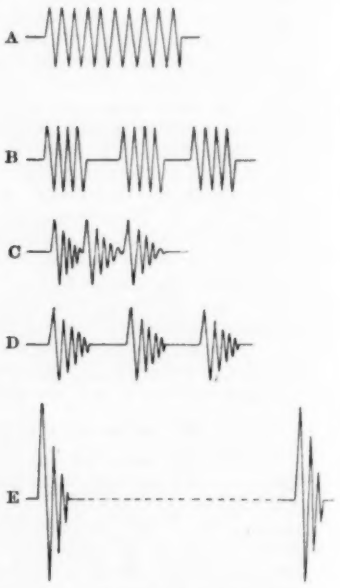



FIG. 7.—Graphic representation of currents oscillating with high frequency. A = oscillations undamped and sustained; B = oscillations undamped and unsustained; C = oscillations damped but sustained; D = oscillations damped and unsustained; E = oscillations damped and unsustained, but with long intervals between periods of oscillation.

(Reproduced from Dr. E. P. Cumberbatch's "Essentials of Medical Electricity," published by Messrs. Henry Kimpton, London.)

its voltage will be correspondingly higher. Vice versa, the narrower the spark-gap the greater will be the frequency and the amperage, but the less the voltage. Hence apparatus for "medical" diathermy have wide spark-gaps or, what amounts to the same thing, a number of narrow spark-gaps arranged in series; here high voltage is essential to overcome the resistance of the large masses of tissue through which the current has to pass. In electrosurgery, on the contrary, only a comparatively superficial action of the current is required, and there is therefore no need for so high a voltage; a narrow spark-gap is employed and the frequency of the trains of oscillations is correspondingly greater. If the spark-gap be so narrow that the trains of oscillations follow each other without interval we obtain a sustained and damped current (Fig. 7). Besides the size of the spark-gap other factors influence the frequency of the oscillations, notably the capacity of the condenser and the amount of self-induction of the solenoid; the smaller these are the shorter will be the duration of each train of oscillations, but the greater their frequency.

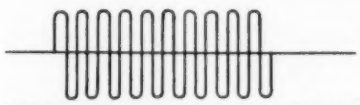


FIG. 8.—"Undamped" and "sustained" wave-train from triode valve apparatus.

The type of current yielded by the triode-valve apparatus is of the sustained and undamped form, in which the amplitude of each oscillation is precisely the same, and the oscillations follow each other with perfect regularity (Fig. 8). The nearest approach to this completely undamped wave that can be obtained from any apparatus of the spark-gap type is the sustained and damped wave-train already referred to (Fig. 7).

### Construction of High-frequency Apparatus

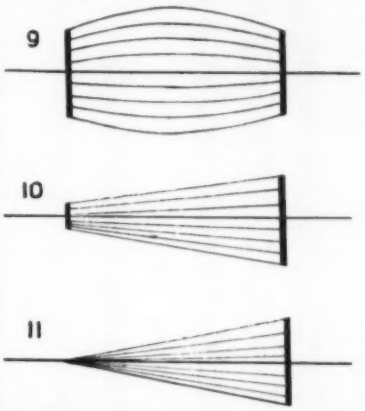
The general plan of a modern high-frequency apparatus of the spark-gap type is shown in Figs. 3 and 4. The alternating current supply from the municipal mains first has its voltage greatly increased by means of a step-up transformer; this current of high voltage then charges a set of condensers, which discharge across the spark-gap and, in doing so, excite oscillations of enormous frequency in the oscillating circuit, including the solenoid; by means of a contact sliding along the solenoid any desired strength of the high-frequency current is then conveyed, usually through auxiliary condensers, to the terminals for the patient. In apparatus for medical diathermy an additional coil (the "resonance" coil) is interposed between the solenoid and the patient (Fig. 4), this coil being completely insulated from the solenoid, from which it is charged by electro-magnetic induction.

If the two electrodes applied to the patient are of large and equal size and are placed on opposite aspects of the body or of a limb, as obtains in medical diathermy, the current will flow directly between them, widening out towards the middle of its course (Fig. 9); the degree of heat developed suffices to stimulate the tissues, but never to cause their coagulation. Immediately beneath each electrode the increased temperature of the tissues is of the same degree, but that of the tissues intervening between the electrodes will vary according to the differences in resistance they offer to the passage of the high-frequency current. Wildermuth [2] compares the specific resistance of the tissues with that of a physiological solution of chemically pure sodium chloride at a temperature of 18° C., which he takes as the unit: he estimates the resistance of the various tissues as:—

| | | | |
|---|---|---|---|
| Fatty tissue | 19·4 | Skin | 2·5 to 3·0 |
| Brain | 5·5 to 6·8 | Muscle | 1·2 to 1·5 |
| Lung | 3·5 to 4·0 | Blood | 1·0 |
| Liver | 2·8 to 3·3 | | |

The resistance of the tissues varies also with their degree of vascularity and their state of physiological activity; dead tissues are less resistant than living tissues.

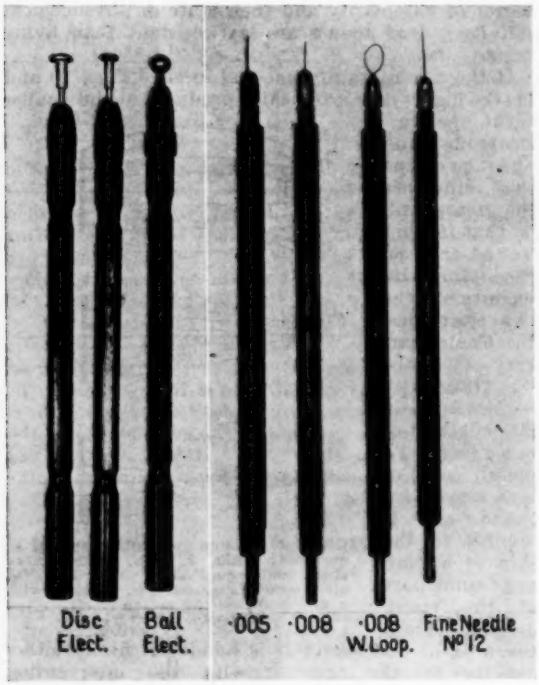
If the electrodes are unequal in size (Figs. 10 and 11) the higher degree of heat is produced at the smaller —the "active" electrode—and the greater this difference the greater will be that in temperature in the immediate vicinity of the two electrodes. In electro-surgery one—the "indifferent"—electrode is a large plate of malleable metal or of metallic gauze, and is applied to the skin of a limb or of some part of the trunk distant from the area of operation; it is bandaged firmly either directly to the skin or with the intervention of several folds of lint soaked in strong saline solution. The other, the "active" electrode, is a small metal disc or knob where coagulation is the effect desired, or a fine-edged knife, needle, or piece of fine wire where cutting is intended. The actual cutting of the tissues is effected by a small electric arc which forms immediately in advance of the electrode, and which splits the tissues by molecular dissolution; there is no need for actual contact between the electrode and the tissues, and still less for any pressure of the electrode upon them such as is required in scalpel surgery. No advantage accrues, therefore, in using a knife as the active electrode, be it never so finely edged, since the tissues are severed before it comes in actual contact with them. After experimenting with numerous kinds and shapes of active electrodes—knives, needles, wires—constructed of various metals, I now use fine tungsten wire only: 0·005 gauge for the skin and 0·008 for the deeper tissues. The finer the electrode and the more closely it approaches a theoretical point the more certain is a purely cutting effect, free from coagulation. A fine needle as the active electrode has the advantage over fine wire of stiffness, and therefore of better control, but since it must necessarily be of wider bore than the fine sizes of tungsten wire already referred to it produces correspondingly greater coagulation. Further, to obtain the purest cutting effects the electrode must be drawn rapidly across the tissues, for if allowed to rest at any spot coagulation will there occur. Obviously, then, the technique of electrosection is very different from that of scalpel surgery, and considerable practice and experience are required to avoid any pressure of the electrode upon




FIGS. 9–11.—Lines of flow of H.F. currents: Fig. 9, with electrodes of large and equal size. Fig. 10, with electrodes of unequal size. Fig. 11, with a fine point as the active electrode.

the tissues, to acquire the correct speed of its passage across them, and to gauge the strength of current requisite for their clean division having regard to the very different resistances they offer to the high-frequency current. Not realising these points some

FIGS. 12 13




**FIGS. 12 and 13.**—Fig. 12, "active" electrodes for electro-coagulation. Fig. 13, "active" electrodes for electro-section (tungsten wire).

surgeons, after a trial much too short to enable them to form a correct idea of its possibilities, have abandoned electrosection in disgust.

### Action on the Tissues

Using the undamped high-frequency current from a triode valve machine and applying it with a light and rapid stroke of the 0·005 gauge tungsten wire electrode, the skin, held preferably slightly on the stretch, can be divided as cleanly as with the sharpest scalpel, with no charring or coagulation of the edges that is visible to the naked eye, and with only just sufficient microscopic coagulation to seal up the lymphatics and capillaries, and to "cap" and obtund the sensory nerves. Such an incision can heal by the most perfect primary union, leaving a scar indistinguishable from that after a scalpel incision, and with decidedly less pain during the healing process. For the deeper tissues the 0·008 wire gives a slightly greater degree of coagulation without, however, preventing primary union. These deeper tissues are divided more quickly or more slowly than the skin according to their comparative resistance, fatty tissue being the most resistant and the slowest therefore in division. Time is gained by increasing the strength of the current when dividing the resistant tissues, and this is especially noticeable in the "radical" breast operation, where the extensive undermining of the skin-flaps has to be carried out entirely in the plane of the resistant superficial fat. Muscle is definitely less resistant than the skin, and for its division the current should be diminished, as otherwise muscular twitchings, from "undertones" of the oscillations, may hinder progress. In spite of the claims made by their manufacturers, of the many machines I have tested personally I have not yet found one giving a cutting current from which muscular contractions are entirely eliminated. With some machines this muscular twitching is so marked as to entail the risk of structures being forced against the electrode and divided unintentionally, as when in performing laparotomy twitching of the rectus abdominis may lead to premature incision of the peritoneum and even of an underlying viscus. Cartilage is little resistant and can be divided with the greatest ease, while bone is so highly resistant that, although it may be "cooked" and rendered friable, it cannot be cut. Liver and kidney offer but slightly greater resistance than the skin, and incisions made into them with the cutting current heal well. Moreover, the tissues in the immediate vicinity of the incision seem to be rendered less friable than is normal, so that these incisions can be sutured more firmly and more accurately than those made with the scalpel, besides showing definitely less hæmorrhage.

For electrocoagulation, in contrast to electro-section, the requisite conditions are very different, and in obtaining the most perfect manifestation of each the essential differences may be tabulated thus:—

| *Electrosection* requires— | *Electrocoagulation* requires— |
|---|---|
| 1. Very high frequency. | 1. Lower frequency. |
| 2. Short wave-length. | 2. Longer wave-length. |
| 3. Lower voltage. | 3. Higher voltage. |
| 4. High amperage. | 4. Lower amperage. |
| 5. "Undamped" wave. | 5. "Damped" wave. |
| 6. Very fine electrode (fine wire). | 6. Larger electrode (needle, button, plate). |
| 7. Electrode moved quickly over tissues. | 7. Electrode moved slowly, or held in contact. |
| 8. Triode valve apparatus. | 8. Spark-gap apparatus. |

The greater the cutting power of any given current the less is its coagulating power, and vice versa.

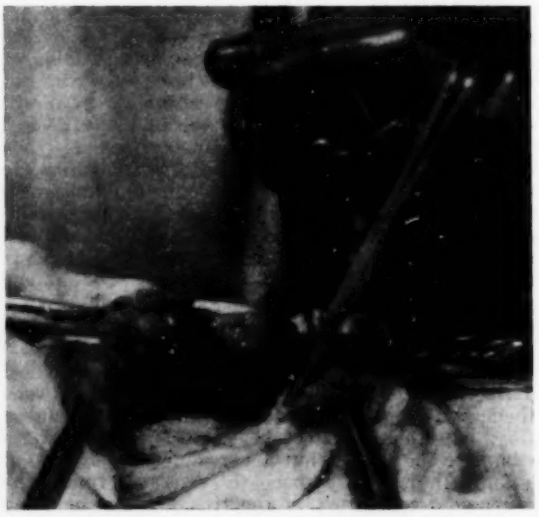


**FIG. 14.**—Coagulation of a blood-vessel, temporarily occluded with artery forceps, by touching the forceps with the active electrode charged with the "coagulating" current.

It cannot, in fact, be too clearly recognised that cutting and coagulation are definitely antagonistic processes,

and the type of current yielded by most of the commercial machines is a compromise between them. The purely undamped wave—the best for electrosection—cannot be produced by any spark-gap machine but requires a triode valve apparatus. Nevertheless, by superimposing the wave-trains from

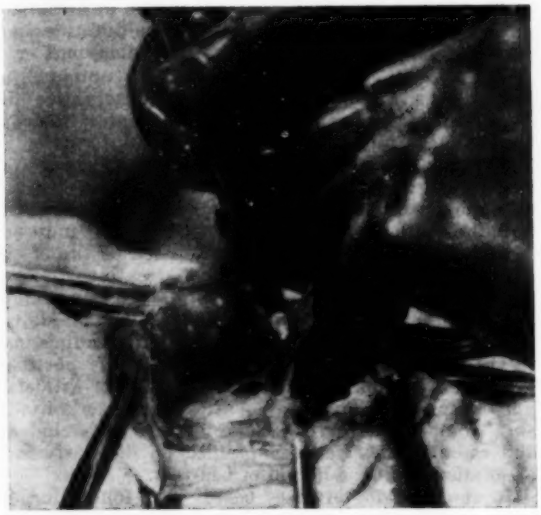


FIG. 15.—Coagulation of a bleeding-point by p'cking up with the teeth of dissecting forceps, whi h is then touched with the active electrode charged with the "coagulating" current.

a spark-gap machine closely upon one another a type of wave can be obtained which approximates to, though it never reaches, the even character of the purely undamped wave. On the other hand, the strongly damped wave—the best for electrocoagulation—is most suitably obtained from a spark-gap machine, although by varying the voltage and amperage of a triode valve current the wave-train can be so modified as to yield a satisfactory coagulating current. The conclusion to be drawn from all this is that while fairly satisfactory electrosection and electrocoagulation can both be obtained from either type of machine, a triode valve is necessary for the most perfect exhibition of electrosection and a spark-gap for that of electrocoagulation. Since, to my mind, it seems the more important for general surgical use to obtain good cutting and primary union of the wound, I believe that the future lies with the triode valve apparatus. It is comparatively recently that such machines have been produced in this country, though long in use in America and France. In the latter, Bordier has been especially prominent in developing the triode valve apparatus which, he states, has the advantages of lower consumption of current and greater output, yielding more than double the wattage of the best spark-gap machine for the same amperage and voltage fed into it; moreover, it is quite silent while a spark-gap is always more or less noisy, no odour of ozone or oxides of nitrogen is emitted, and no coal-gas or alcohol is needed such as some spark-gaps require. Theoretically the ideal would be the use of both types, the surgeon performing the cutting portion of the operation with the triode valve apparatus, and his first assistant following with the coagulating current from a spark-gap machine and coagulating any bleeding points; this is sometimes carried out. In most machines, however, the two types of current are produced separately, and either can be switched on at will to the same active electrode. In general surgery the coagulating current is used nowadays almost exclusively for the arrest of hæmorrhage. The coagulation of large masses of tissue, leaving the coagulated portion to separate naturally—a method much in vogue in the early days of surgical diathermy—is seldom now employed: owing to the varying resistances of the tissues it is impossible to predict the direction and extent of the resulting coagulation, so that on separation of the coagulated tissues it may be found that there has been unexpected necrosis of the wall of one of the larger blood-vessels—with resultant secondary hæmorrhage. Where a large mass of tissue has to be removed it is better practice to excise it with the cutting current and employ the coagulating current to arrest hæmorrhage from the cut surface. With the cutting current there is rather less hæmorrhage from the capillaries than with the scalpel, and this soon ceases. Vessels of any size, however, require to be picked up with artery forceps and, at the conclusion of the operation either ligatured in the ordinary way or "coagulated" by lifting the forceps away from contact with any other instrument or tissue and touching it for a few seconds with the electrode charged with the coagulating current. On removing the forceps the coagulated vessel is gently wiped with a swab, when the bleeding will usually be found arrested; should it, however, restart, it is better to seize the bleeding point again with forceps and ligature it. Single small spouters in the course of dissection may be seized with the teeth of the dissecting forceps usually held in the left hand and coagulated by touching the forceps with the coagulating current. This closure of vessels by coagulation can be effected very rapidly as compared with ligation, and in an extensive operation such as that for breast carcinoma considerable time can be saved. It is preferable, however, to ligate branches divided close to a large parent vessel, such as the axillary, since, although they can be securely closed by coagulation yet there is a risk that the process may occasionally extend to the junction with the parent trunk, and result either in its thrombosis, or in secondary hæmorrhage.

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1. Cluzet and Chevalier: Arch. d'électric. méd., 1926, xxiv., 65.
2. Wildermuth (reported by Keysser): Die Elektrochirurgie, Leipzig, 1931.

*(To be concluded)*

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HOSPITAL SAVING ASSOCIATION: ANNUAL REPORT.—At the eleventh annual meeting of group representatives of this association recently, Sir Alan Anderson, the chairman, who presided, reviewed the progress made. He said that in ten years the association had paid £2,355,000 for hospital services and had built up, almost entirely out of weekly threepences, an income which is now approaching £750,000 a year. During the year under review there was a net increase of 129,000 contributors and of over £74,000 in income. He added that the figures with regard to the association's patients treated at the London hospitals lent no support to the assumption that the association's contributors were deserting their doctors in order to obtain general practitioner treatment at hospitals. Many group secretaries resented the imputation that they were damaging—let alone ruining—a profession which they respected and admired. During the year the association had paid over £468,000 for hospital services, and authority had now been given to add to the distribution to voluntary hospitals a little over £33,000. The total represented an increase of £60,000 on the previous year. Extra hospital benefits cost £86,500.

# ARTIFICIAL PNEUMOTHORAX TREATMENT

## SOME RESULTS AND CONCLUSIONS

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Artificial pneumothorax has been steadily growing in popularity during the past few years, but it is still employed sparingly by some workers. Fishberg,[1] with his vast experience in America, considers that hardly 5 per cent. of tuberculous patients can be regarded as suitable for the treatment, while Heaf[2] has recently drawn attention to the misuse of artificial pneumothorax both clinically and administratively. Many favourable statistics have, indeed, been published, but it is difficult to obtain absolute proof by such means. In fact, it has been suggested by Shaw[3] that an experience of statistical dimensions actuarily treated is practically impossible. One difficulty is that medical superintendents of institutions are seldom responsible for the treatment of patients on discharge, and often find it difficult to follow up their cases.

The present paper deals with men, drawn almost exclusively from one dispensary area with a population of about 345,000, who received their treatment from the dispensary officer at the Peel Hall hospital situated in the same area and subsequently returned as out-patients for refills at the dispensary. Moreover, almost all the men patients in the hospital are drawn from the area in question, so that it has been possible to gain some idea as to the suitability for artificial pneumothorax of such patients from a sample population, and to keep in close touch with those in whom this treatment has been instituted. Since 1928, when an X ray apparatus was installed, the possibility that this form of treatment might be beneficial has been considered in relation to each patient admitted.

Artificial pneumothorax—the greatest advance in treatment since the inception of the sanatorium[4]—is, in fact, a particular application of the fundamental principle of sanatorium treatment—viz., rest. By compression of the lung, through the introduction of air into the pleural cavity, local rest of the affected part is obtainable. In practice the possibilities of applying the treatment are limited. Severe bilateral cases have usually to be excluded,[5] and in patients with less extensive disease the introduction of air is frequently impossible owing to adhesion of the diseased lung to the chest wall. The success of the treatment in certain acute forms of unilateral disease is often marked, but many types of case are unsuitable, and the majority of experienced workers agree that artificial pneumothorax should not be lightly undertaken. Apart from the duration of treatment[6] (refills necessary at intervals for about three years), each individual patient requires special consideration, not only as regards suitability but subsequently before each refill.[7]

### SELECTION OF CASES

Recent unilateral cases with comparatively slight involvement of the opposite lung are particularly suitable, especially in young subjects. Some of the most dramatic results are seen in such patients. High fever disappears, sputum is lessened, and the condition steadily improves. Good results are also frequently obtainable in patients with more extensive lesions, dependent upon the amount of fibrosis and the closure of cavities, if present. On the other hand, patients with much fibrosis, and particularly those of middle age, should not be given artificial pneumothorax as they are apt to be made worse by it. The point as to how long it is desirable to wait before induction is debatable. If a patient is doing well with bed-rest there is no advantage in initiating a form of treatment which, owing to its duration and possible complications, may prove troublesome.

There is an impressive weight of opinion in favour of a preliminary period of conservative or sanatorium treatment, and its advocates include Gravesen,[8] Saugman,[9] Matson,[10] and Pearson.[11] Burrell,[12] however, considers that the percentage of real recoveries would be increased if all cases with tubercle bacilli in the sputum and definite signs of unilateral disease had artificial pneumothorax induced at once, instead of waiting to watch the results of an actual period of simple medical treatment. The patients in the Peel Hall hospital are invariably requested, as soon as tuberculosis is diagnosed, to remain in bed at home until their turn for admission to the hospital arrives, so that it is usually possible to reach a decision as to their suitability for artificial pneumothorax treatment soon after they are admitted, as a comparison can be made between the clinical and radiological evidence obtained on diagnosis and on admission after a period of bed-rest.

In the majority of cases bacilli were found during the course of the illness. Since the utilisation of good skiagrams has, in combination with clinical evidence, placed diagnosis on a more satisfactory basis than obtained in pre-radiology days, it is not my practice to wait until bacilli are demonstrated in the sputum, as valuable time may thereby be lost. In fact, as will be shown later, the percentage of negative sputum cases alive after a given time was found to be twice as high in those who received artificial pneumothorax as in those where this was unsuccessful or abandoned.

It is convenient to subdivide possible cases of pneumothorax into classes representing degrees of suitability for this form of treatment. In this connexion it is generally agreed that the extent of the disease should be considered with definite reference to the presence or absence of cavitation in the lung chosen for collapse, and the presence or absence of disease in the better lung, both founded on a combination of radiological and physical findings. In connexion with a proposed investigation of the results of the particular "T.B. plus" cases, a subcommittee of the Joint Tuberculosis Council, which has this matter under special consideration, has suggested the following classification of "choices":—

*Choice A.*—Cases of unilateral disease without definite evidence of cavitation, the other lung being clear.

*Choice B.*—Cases with evident cavitation in one lung only and with or without limited lesions in the opposite lung, such limited lesions not involving more than one-third of the lung.

*Choice C.*—All other cases, including cases with severe complications, such as advanced laryngeal disease.

This paper deals with 143 men in whom inductions were attempted from January, 1929, onwards. Four cases, being untraced at the end of 1932, are excluded from the tables.

Table I. shows the age-groups of the 139 patients. The youngest patient * was a boy of fifteen years, with tubercle bacilli in the sputum; the oldest patient

* This year I have given artificial pneumothorax to a boy, aged 8, whose sputum contained tubercle bacilli, so far with excellent result.

TABLE I.—*Ages of the Patients*

| Age-periods (years). | T.B. plus. | T.B. minus. | Total. |
|---|---|---|---|
| Under 20 .. .. | 11 | 6 | 17 |
| 20 to 30 .. .. | 30 | 18 | 48 |
| 30 to 40 .. .. | 31 | 7 | 38 |
| 40 to 50 .. .. | 21 | 8 | 29 |
| 50 and over .. .. | 6 | 1 | 7 |
| Totals .. .. | 99 | 40 | 139 |

was 55. Unless the disease is acute and progressive it is well to hesitate before making inductions in the elderly. Table II. shows the side mainly involved :—

TABLE II.—*The Side Involved*

| Side. | T.B. plus. | T.B. minus. | Total. |
|---|---|---|---|
| Right side .. .. | 45 | 23 | 68 |
| Left side .. .. | 52 | 17 | 69 |
| Bilateral .. .. | 2 | — | 2 |
| Totals .. .. | 99 | 40 | 139 |

## TECHNIQUE

The pneumothorax apparatus designed by Peter Edwards[13] has been found simple, effective, and reliable. Treatment is given in bed at first, and subsequently in a special treatment-room, X ray screening beforehand being the rule, with skiagrams at intervals. An injection of omnopon, gr. $\frac{1}{3}$, is given subcutaneously half an hour previously. Local injections of 2 per cent. novocain with 1 : 100,000 adrenaline are given at the induction and before the first two refills, and are then discontinued. The first three refills are given at daily intervals; thereafter every other day, the period being gradually lengthened to a maximum interval of two to three weeks. At first, 300 c.cm. of air are given, and this may be increased to 500-600 c.cm. Small and frequent refills are preferred, as the result is more likely to be collapse of the diseased portions only (selective collapse) while, in addition, effusions tend to occur much less frequently than have been reported when big refills at long intervals (6 to 8 weeks) were in vogue. In my series effusions, requiring gas-replacement on one or more occasions, occurred in 20 cases.

Artificial pneumothorax is often advantageously combined with other forms of treatment and is, of course, superadded to the sanatorium régime of the hospital. In agreement with the experience of Burrell[14] and others, sanocrysin has been found of benefit in some cases, where the disease has spread to the opposite lung, and the phrenicectomies performed by Mr. Morriston Davies[15] on over 50 of my cases have also been found useful where the degree of collapse was slight or inadequate. (The word phrenicectomy is used to include cases where phrenic evulsion was done. The latter operation, which aims at a gradual evulsion of the whole of the nerve, has been latterly modified by Mr. Davies. He now removes a segment of the nerve and divides such accessory phrenic nerves as can be found—phrenicectomy.) This operation avoids the risk of pain, injury to lung, or hæmorrhage, which may occasionally follow evulsion.

## RESULTS

It is no easy matter to evaluate the results of any given form of treatment by methods likely to satisfy a statistician, especially where, as in the present instance, the numbers are relatively small and the time interval is rather short. Moreover, in comparing the results of different workers, a number of complicated factors have to be taken into account. Such factors as selection of cases, technique, and association with other forms of treatment all complicate the issue.

The figures presented relate to the condition at the end of 1932 of 139 men in whom inductions were attempted from January, 1929, onwards. It will be noticed that tables for T.B. plus cases and T.B. minus cases have been given separately. Various forms of treatment are seen to have been combined with artificial pneumothorax. The particular criteria taken are: (1) whether or no the patient was alive at the end of 1932, (2) whether the patient was working or fit for work, (3) whether, in T.B. plus cases, bacilli had disappeared from the sputum at that date.

As a basis of comparison, cases where sufficient air was regularly induced for a period of at least three months to obtain a satisfactory collapse are contrasted with corresponding cases where the induction was unsatisfactory or was soon abandoned owing to adhesions. This, however, is not really a satisfactory criterion, though it is difficult to devise a better, as the number of patients in the hospital in whom inductions were attempted was only 28 per cent. of the admissions of definitely tuberculous cases. Unsuccessful induction is nearly always due to fibrosis, and as the formation of fibrous tissue is evidence of a healing process or tendency it is reasonable to expect that in such cases the fibrosis, unsuspected perhaps at the time, will lead to healing of the lesion. We are thus comparing our successfully induced cases with cases where, from the nature of the condition, a satisfactory result is not unlikely. It follows that the results of artificial pneumothorax will appear in a relatively less favourable light than if one could compare the results of treatment in two exactly similar groups of cases, the one receiving the treatment, the other not.

In the following Tables the cases are subdivided under choices, as described above in dealing with selection of cases, but the numbers under these separate headings are too few to enable definite conclusions to be drawn therefrom. A register is being kept whereby the condition of all patients in whom artificial pneumothorax has been attempted will be noted at the end of each year, and it is hoped that, as the numbers and time factor increase, useful information will be obtained.

Table III. shows: (1) That of the T.B. plus cases satisfactorily induced 42 per cent. were working or fit, and 22 per cent. were dead; 11 out of 46 living cases had gas replacements, as compared with 5 out of 13 deceased. (2) That there was a similar number of 40 per cent. working or fit out of 31 T.B. plus cases where induction was unsuccessful, but it must be particularly noted that in 19 of these phrenicectomy was done, and of the 19, 11, or 58 per cent., were working or fit. This form of treatment, added to a tendency towards fibrosis or healing, thus appears to give results comparable with those obtained by artificial pneumothorax in more acute cases. In addition, 22 per cent. were dead and none of these had had phrenicectomy.

Table IV. deals with 26 T.B. minus cases where a satisfactory collapse was obtained; 69 per cent. were working or fit, and 8 per cent. deceased. It also shows where induction was unsuccessful. Of 14 T.B. minus cases, of whom 8 had phrenicectomy, 36 per cent. were working or fit while 21 per cent. were dead.

Table V. shows that up to the end of 1932, 78 per cent. of 46 "satisfactory" cases lost their bacilli as compared with 64 per cent. of 31 cases unsuccessfully induced. Note, however, that phrenicectomy

was done in 19 of the latter 31, and of these 13, or 68 per cent., had lost their bacilli.

### TABLE III.—*Patients with Positive Sputum*

Position at the end of 1932 of 99 artificial pneumothorax patients with positive sputum treated at the Peel Hall Pulmonary Hospital from January, 1929, onwards.

(A) SATISFACTORY INDUCTIONS

| — | Choice. A. | B. | C. | Total. No. | Per cent. |
|---|---|---|---|---|---|
| Working or fit for work | 4 | 14 | 7 | 25 | 42 |
| Unfit for work | 2 | 11 | 8 | 21 | 36 |
| *Additional measures—* | | | | | |
| Gas replacements | 1 | 2 | 3 | 6 | .. |
| Phrenicectomy | — | 1 | 2 | 3 | .. |
| Gas replacement and phrenicectomy | — | — | 2 | 2 | .. |
| Phrenicectomy and scalenectomy | — | 1 | 1 | 2 | .. |
| Gas replacement, phrenicectomy, and cleothorax | — | 1 | — | 1 | .. |
| Gas replacement, phrenicectomy, and scalenectomy | 1 | — | — | 1 | .. |
| Gas replacement and cleothorax | — | 1 | — | 1 | .. |
| Dead | 2 | 6 | 5 | 13 | 22 |
| *Additional measures—* | | | | | |
| Gas replacements | 2 | 2 | 1 | 5 | .. |
| Sanocrysin | — | — | 1 | 1 | .. |
| Total | 8 | 31 | 20 | 59 | .. |

(B) UNSUCCESSFUL INDUCTIONS

| | | | | | |
|---|---|---|---|---|---|
| Working or fit for work | 8 | 5 | 3 | 16 | 40 |
| Unfit for work | — | 8 | 7 | 15 | 38 |
| *Additional measures—* | | | | | |
| Phrenicectomy | 4 | 8 | 7 | 19 | .. |
| Dead | 1 | 3 | 5 | 9* | 22 |
| *Additional measures—* | | | | | |
| Gas replacement | — | 1 | — | 1 | .. |
| Total | 9 | 16 | 15 | 40 | .. |

* None of these had phrenicectomy.

The percentage working or fit for work is almost the same for patients who had artificial pneumothorax satisfactorily induced as for patients who had an unsuccessful induction, although in the latter group 19 of the 31 had phrenicectomy. Eleven of the 19 were working or fit. Phrenicectomy, added to a tendency towards fibrosis or healing, appears to give results comparable with those obtained by artificial pneumothorax in more acute cases.

### TABLE IV.—*Patients with Negative Sputum*

Position at the end of 1932 of 40 artificial pneumothorax patients with negative sputum treated at the Peel Hall Pulmonary Hospital from January, 1929, onwards.

(C) SATISFACTORY INDUCTIONS

| — | Choice. A. | B. | C. | Total. No. | Per cent. |
|---|---|---|---|---|---|
| Working or fit for work | 11 | 3 | 4 | 18 | 69 |
| Unfit for work | 1 | 3 | 2 | 6 | 23 |
| *Additional measures—* | | | | | |
| Gas replacements | — | — | 2 | 2 | .. |
| Phrenicectomy | — | 2 | — | 2 | .. |
| Gas replacement and phrenicectomy | — | 1 | — | 1 | .. |
| Dead | — | 1 | 1 | 2 | 8 |
| Total | 12 | 7 | 7 | 26 | .. |

(D) UNSUCCESSFUL INDUCTIONS

| | | | | | |
|---|---|---|---|---|---|
| Working or fit for work | 2 | 2 | 1 | 5 | 36 |
| Unfit for work | 2 | 1 | 3 | 6 | 43 |
| *Additional measures—* | | | | | |
| Phrenicectomy | 3 | 3 | 2 | 8 | .. |
| Dead | 2 | — | 1 | 3 | 21 |
| Total | 6 | 3 | 5 | 14 | .. |

Note a remarkable difference between the cases with a satisfactory induction and those with an unsuccessful induction in regard to the percentage working or fit for work—69 per cent. against 36.

### TABLE V.—*Bacillary loss as at the end of 1932 of T.B. plus cases treated by Artificial Pneumothorax*

(E) SATISFACTORY INDUCTIONS

| — | Choice. A. | B. | C. | Total. No. | Per cent. |
|---|---|---|---|---|---|
| Sputum still positive | — | 3 | 7 | 10 | } 78 |
| Sputum become negative | 2 | 15 | 4 | 21 | |
| Sputum now absent | 4 | 7 | 4 | 15 | |
| Total | 6 | 25 | 15 | 46 | .. |

(F) UNSUCCESSFUL INDUCTIONS

| | | | | | |
|---|---|---|---|---|---|
| Sputum still positive | 1 | 4 | 6 | 11 | } 64 |
| Sputum become negative | 1 | 4 | 2 | 7 | |
| Sputum now absent | 6 | 5 | 2 | 13 | |
| Total | 8 | 13 | 10 | 31* | .. |

* Note.—In 19 of the 31 phrenicectomy was done. In 13 of the 19, or 68 per cent., the sputum became negative or absent.

## DISCUSSION

Artificial pneumothorax was attempted in 139 out of 487 admissions of definite cases of pulmonary tuberculosis—i.e., 28 per cent. A satisfactory collapse was obtained in 59 out of 99 T.B. plus cases, and in 26 out of 40 T.B. minus cases—i.e., in 17 per cent. of the total cases admitted. The tables show that, of patients so treated, a considerable number of men were working or fit, and had lost their bacilli at the end of 1932. This disappearance of bacilli has a distinct bearing on public health, because thereby important sources of infection are removed. There is reason to believe that in my dispensary area more T.B. plus cases are alive, relatively to the total number of tuberculous patients, than before the introduction of collapse therapy, and the impression that such patients live longer is thus strengthened. Their regular attendance at the dispensary for refills is noteworthy, and by their obvious improvement in health they help to raise the morale of their fellow-patients, both in hospital and as out-patients. This in itself is significant. The results in the T.B. plus cases of artificial pneumothorax satisfactorily applied and in cases with fibrosis where this was impossible (but where in 19 out of 31 phrenicectomy was done) show a striking similarity. It thus appears that we must regard artificial pneumothorax as but one aspect of collapse therapy, which includes phrenicectomy and, occasionally, thoracoplasty.

## SUMMARY

1. Artificial pneumothorax is a valuable adjunct to treatment in an appreciable, but limited, number of patients. It assists restoration to working capacity and leads to the disappearance of bacilli from sputum in a great many cases.

2. The benefits of this treatment are thus not limited to the patient, but have an important bearing on prevention.

3. Artificial pneumothorax is a form of collapse therapy and must be considered in relation to other forms. In cases unsuitable for this treatment good results are often obtainable from phrenicectomy.

4. The favourable impression that patients undergoing collapse therapy create on the minds of their fellow-patients, both in hospital and at dispensaries, is an indirect testimony to the value of the treatment and incidentally is important as affecting the morale of the other patients.

5. The results of collapse therapy suitably applied are often appreciably better in a given time than the results of treatment used to be without it, although the close supervision that is needed in connexion

with artificial pneumothorax must be given due weight in assessing the value of this special ancillary method of treatment.


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# CUTANEOUS REACTIONS TO PRODUCTS OF THE HÆMOLYTIC STREPTOCOCCUS

## IN SCARLET FEVER AND ERYSIPELAS

By J. P. McGIBBON, M.D., M.R.C.P. Edin., D.P.H.

DURING recent years numerous writers have reported the occurrence both in health and in disease of cutaneous reactions to various streptococcal products. They believe that these reactions are due to the development of an allergic or hypersensitive state. Most of this work has been focused round the problem of rheumatic infection, and Coburn [1] in America and Collis [2] in this country have published results which, based on a study of these skin reactions, appear to demonstrate the close association between the condition which Coburn calls the "rheumatic state" and infection with a hæmolytic streptococcus.

It therefore has become of obvious interest to ascertain whether the skin reactions described by these workers would follow a known streptococcal infection such as scarlet fever, or whether, on the other hand, these reactions can be regarded as in any sense specific to rheumatic infection. The results obtained in skin-testing a small preliminary series of scarlet fever patients have already been described (Gibson and McGibbon [3]). This work has since been extended, an effort being made to eliminate any possible fallacies. The skin reactions in erysipelas contrast sharply with those in scarlet fever and deserve special attention.

### Methods and Results

The extracts used for skin-testing have been prepared in the department of bacteriology in the University of Edinburgh. The method of preparation has been described previously. The material used is an extract obtained from the hæmolytic streptococcus, freed from diffusible exotoxin and from bacterial debris. The "endotoxin" so obtained is apparently identical for practical purposes with the active principle of the American "nucleoprotein" preparation. It will here be called "hæmolytic streptococcal extract," designated for short H.S.E. as suggested by Collis.[4] The crude extract was diluted 1/100 in saline prior to skin-testing, and 0·2 c.cm. of this diluted material was injected intracutaneously in the anterior aspect of the forearm. The results were read at the end of 24 hours.

*Reactions to H.S.E.*—Twenty-four hours after the injection of H.S.E. nothing may be seen but a small area of trauma at the site of injection. This frequently takes the form of a minute papule, which may be seen for some days. On the other hand, there may appear after some hours an area of redness, which increases in intensity to reach a maximum of perhaps 50 by 30 mm. at the end of 36 hours. In the very strong reactions this area increases still further till it may reach 80 or even 100 mm. in its greatest diameter. The fully formed reaction, when typically developed, is marked off into zones. There is a central dark red swollen area of perhaps 20 to 30 mm. in diameter, surrounded by a much paler erythema which may in turn either merge into the surrounding skin or possess a sharp outline. Less commonly, a zone of pallor may surround the erythema. The dark red area is œdematous, and in the centre there is often a paler spot or vesicle, which is almost necrotic in appearance. Tenderness is almost a constant feature, and occasionally there is slight pain on movement of the arm. Fading is rapid after 24 to 48 hours, depending on the degree of reaction, but traces of the inner papular lesion may remain for some days.

There can be no difficulty in the recognition of the negative reaction on the one hand and the moderately strong positive reaction on the other. In between these, however, there is every degree of reaction, and in the healthy adult a mild degree of erythema is almost the rule. Many of these reactions are of feeble character, and by the end of 24 hours are already fading. It is impossible to define the limits of the reaction with any accuracy, and their significance is open to doubt. It is probable that by employing a higher dilution of extract, many of these feeble reactions might be eliminated.

In reviewing the results a reaction has not been accepted as positive unless the erythema extended to 20 mm. in both diameters, except in a few cases where a slightly smaller reaction in a young child has been accompanied by the swelling, tenderness, and sharp delineation which one associates with a positive reaction. It is realised that the fixing of a 20 mm. minimum is purely arbitrary, but if one considers in each case the character of the reaction as well as its size, this division becomes, in actual practice, much less artificial than it would appear on paper. The positives have been subdivided into "one plus," "two plus," and "three plus" reactions, having a mean diameter of over 20 mm., 30 mm., and 40 mm. respectively.

#### SCARLET FEVER

A total of 74 cases were skin-tested with H.S.E. on admission and during convalescence, the first 28 cases being tested in each week of the disease. On admission no case showed a positive reaction and the feeble type of reaction described was uncommon. It was possible to divide the cases into two main groups on the behaviour of the skin reaction in the subsequent weeks. Table I. shows the number of cases developing allergic reaction in each age-group.

TABLE I

| Age-group. | Cases in group. | Negatives. | Positives. | | | |
|---|---|---|---|---|---|---|
| | | | 1-plus. | 2-plus. | 3-plus. | Total. |
| 1–5 | 19 | 6 | 9 | 3 | 1 | 13 |
| 6–10 | 37 | 2 | 21 | 13 | 1 | 35 |
| 11–40 | 18 | 0 | 4 | 9 | 5 | 18 |
| Totals .. | 74 | 8 | — | — | — | 66 |

*Positives.*—This group numbered 66 cases—i.e., 89·2 per cent. of the total. All the cases over seven years of age became positive, and from a study of the 28 cases which were tested every week it was noted that the allergic reaction tended to appear earlier in the older age-groups.

*Negatives.*—Only 8 cases (10·8 per cent.) failed to develop definite positive reactions. The oldest of these patients was aged seven years. Five such cases showed a feeble reaction which remained unchanged. One child remained Dick-positive and relapsed in the fifth week.

Table II. shows the 74 cases of scarlet fever grouped according to the coincident changes in the Dick reaction.

TABLE II

| Group. | H.S.E. | | Dick test. | | Cases. |
|---|---|---|---|---|---|
| | On admission. | On discharge. | On admission. | On discharge. | |
| 1 | − | + | + | − | 53 |
| 2 | − | + | − | − | 11 |
| 3 | − | + | + | + | 2 |
| Cases developing allergic reaction .. .. .. | | | | | 66 |
| 4 | − | − | + | − | 7 |
| 5 | − | − | − | − | 0 |
| 6 | − | − | + | + | 1 |
| Cases not developing allergic reaction .. .. .. | | | | | 8 |

Sixty cases (Groups 1 and 4) showed the usual change in the Dick reaction from positive to negative, but 7 of them (Group 4) failed to develop a positive reaction to H.S.E. On the other hand, of the 3 cases which remained Dick-positive (Groups 3 and 6), 2 became sensitive to H.S.E. (Group 3).

It does not seem possible on the basis of these results to distinguish any close relationship between the two reactions. When, however, one studies the changes in the skin reaction from week to week, the impression is gained that where the Dick-positive state tends to persist till late in convalescence, the allergic reaction tends to be slow in appearing. On the other hand, when the typical change in the Dick reaction has occurred by the second week, the allergic reaction appears more rapidly. There may, however, be no specific relationship between the two reactions, the explanation resting rather in the ages of the subjects tested. In the younger children there is a less constant development of sensitiveness to H.S.E. There also appears to be a "lag" in the development of immunity as judged by the appearance of a Dick-negative state on weekly testing (unpublished observations).

Tests in persons not suffering from scarlet fever were also made: 160 persons were tested and numerous retests have been made. The following are the results in brief:—

*Measles.*—Thirty cases, aged 1 to 10 years. Twenty were convalescent cases in the third or fourth week of disease. All were negative, contrasting sharply with the convalescents in scarlet fever.

*Diphtheria.*—Twelve children, aged 3 to 16 years, were tested with H.S.E. at different stages of the disease. The three oldest children gave positive reactions. The others were all negative and remained so when retested. Antitoxin dosage, 6000 to 150,000 units.

*Puerperal Infection.*—Twenty-one cases were tested on admission. Seven were positive, 14 were negative. In 5 of 14 cases where it was possible to carry out repeated weekly tests there was a notable increase in the intensity of the reaction, but it was not possible to ascribe this with any certainty to the specific effect of infection with a hæmolytic streptococcus. All seriously ill patients gave negative or feeble reactions. The reaction to H.S.E. prior to infection was not known.

*Medical Cases.*—Thirty-four patients, aged 9 to 65 years. Negatives numbered 21. They included the gastric, respiratory, tuberculous, and cardiac (old rheumatic) cases tested. Positives numbered 13 (38 per cent.). They included cases of rheumatic infection (5), arthritis (2), asthma (2), nephritis (1), hæmaturia (1), and anæmia (1). A very strong reaction was noted in a case of erythema nodosum. (The great sensitivity of the skin in this condition to H.S.E. has already been described by Collis.[5])

*Health.*—Thirty-three healthy persons were tested. Five were members of the medical staff of the Edinburgh City Hospital, and being exposed to hæmolytic streptococci every day can scarcely be regarded as normal persons. Two were very strong reactors, one moderately strong, and two negative. All had had scarlet fever. The other 28 persons were medical students not in contact with scarlet fever. Only six definitely positive reactions were obtained. It was not possible to relate the results to any previous infection or to the Dick reaction. Retests four weeks later revealed no material change.

ERYSIPELAS

The skin reaction to H.S.E. in erysipelas, another streptococcal infection, is of considerable interest.

*Negatives.*—Of 30 patients tested, only three negatives were obtained. The first negative patient was found subsequently not to be suffering from erysipelas, and was removed to a surgical unit for treatment of a subacute mastoiditis. The second negative result occurred in a case of erysipelas complicating very severe burning. The patient was moribund when tested. The third negative reaction occurred in a child two years of age who was gravely ill.

*Positives.*—The reactions obtained were in many cases of considerable intensity, even in the presence of high fever. Retests did not reveal any material change in the reaction. In erysipelas there does not seem to be the same differentiation into zones, the reaction rather taking the form of a uniform pink or red erythema, with a slightly raised clearly defined margin, showing some similarity to the erysipelatous lesion itself, but with only slight tenderness, no actual pain, and no tendency to bleb-formation.

## Discussion

In the previous paper it was submitted that the reaction which appeared in the later stages of scarlet fever had arisen de novo and could not mark the reappearance of a pre-existing allergic state. In health such reactions seldom occur in young children, but their incidence increases up to about the age of fourteen.[4,6] The cases tested were all of a mild type, whereas these skin reactions occur in the presence of sharp pyrexia and do not appear to be inhibited by systemic disturbance, unless this be severe. Mackenzie and Hanger[7] reported that repetition of injections on the same area of skin may produce some non-specific acceleration of the reaction. In the later series of 46 cases only one retest has therefore been made. An even higher proportion of positives has been obtained than previously where the tests were made weekly. It did not seem likely that the repetition of injections could be producing any specific sensitisation of the patients tested, and subsequent work has shown that this possibility can also be excluded. Numerous retests in patients suffering from a wide variety of diseases as well as on healthy persons have failed to reveal any material change in the reaction.

The results obtained bear some analogy to those obtained by Irvine-Jones[8] in rheumatic children using a composite reagent containing both extracellular and intracellular material, and also to the experimental work of Dochez and Stevens.[9] They also show a striking resemblance to results obtained ten years ago by Bristol,[10] using a dry preparation of streptococcus protein by the percutaneous route.

It is difficult to assess the clinical significance of the development of this allergic state in the late stages of scarlet fever. It seems possible that it may be a factor in the onset of that most interesting complication, scarlatinal nephritis. Some experimental evidence has been produced by Lukens and Longcope,[11] which adds strength to this belief.

The incidence of nephritis in the Edinburgh City Hospital is very low, and the complication did not arise in the 74 cases tested. A few other cases have, however, been tested after the onset of the renal complication, but the reaction has not shown any undue severity or other feature of interest, suggesting that there must be some more important factor involved.

In scarlatinal arthritis the reaction appears to be constantly well developed and may be exceptionally severe. According to Gibson and Thomson [12] the incidence of positives in the acute febrile phase of rheumatic infection is relatively low. On the basis of these skin reactions scarlatinal arthritis and acute rheumatism therefore appear to be sharply differentiated. This finding suggests that the importance of the hæmolytic streptococcus in the latter condition has been over-estimated, and this is in accord with the general conclusion of Gibson and Thomson. As, however, their results are at variance with those obtained by Collis,[2 4] there is obviously need for further investigation before any conclusions can be drawn.

The persistence of this allergic state also requires further study, especially if scarlet fever be accepted as an ætiological factor in the subsequent development of acute rheumatism. Three cases have been retested with H.S.E. 12 months after their scarlet fever. All are still positive, and one patient has developed chorea.

Apart from the problem of rheumatic infection, the demonstration of the development of this allergic reaction is of interest in that it lends support to the suggestion advanced by Ando [13] and also by Toyoda [14] that a positive Dick reaction may be due to an "endotoxic" factor in the Dick filtrate used. I can only say in this connexion, however, that after testing 150 scarlet fever patients week by week with the "Dick toxin" supplied by Messrs. Burroughs Wellcome and Co. the development of this type of reaction during the course of the disease has never been observed.

### Summary and Conclusions

A condition of hypersensitiveness to products of the hæmolytic streptococcus has been described by various workers. It has been possible to demonstrate the development of this allergic state during the course of scarlet fever.

Using an extract representing the soluble intracellular products of the organism freed from all diffusible substances, about 90 per cent. of 74 cases, including all the cases over seven years of age, have shown a positive reaction by the fourth week. The relationship of this allergic state to scarlatinal nephritis and arthritis and its possible importance in the development of the rheumatic state have been briefly discussed.

A total of 160 persons not suffering from scarlet fever have also been skin-tested. In all cases age has an important influence on the results. Retests both in health and in a wide variety of diseases have produced no material change in the reaction. The latter appears to be inhibited in chronic cardiac disease and wasting conditions, but not in acute infections, unless these be of great severity.

The results in erysipelas contrast sharply with those in scarlet fever. In erysipelas the reaction to H.S.E. is positive in the first week and appears to remain so throughout the disease. In the absence of extreme illness a negative reaction in an adult patient should, therefore, question the diagnosis of erysipelas.

Conclusions at this stage must necessarily be limited. It will not be possible to assess the importance of the results already obtained until the mechanism of these skin reactions is better understood and until their significance, in relation to the vital processes in general, is better appreciated.

Most of these observations have been made at the Edinburgh City Hospital and I again wish to express my thanks to Dr. W. T. Benson. I am also indebted to Dr. Chalmers Watson for giving me access to his wards at the Edinburgh Royal Infirmary.

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## OBSERVATIONS ON THE TREATMENT OF CLIMATIC BUBO AND ALLIED DISEASES

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CLIMATIC bubo and allied diseases are a cause of much invalidism in the tropics and subtropics. Much valuable work has been published recently both in this country and abroad which has greatly advanced our knowledge of the pathology of climatic bubo and clarified the diagnosis of this disease; but in the last few years little has been written about the treatment, despite the fact that this has hitherto been far from satisfactory. Any therapeutic measure which raises a hope of reducing the inevitable period of disability of these buboes should be more than welcome.

In this paper are recorded observations on the treatment of 81 cases of inguinal adenitis, occurring in China and the West Indies, closely similar in their symptoms and course. No serious effort has been made to classify the cases, which are grouped under the elastic definition of "climatic bubo and allied diseases." In practice they divided themselves into two main classes: (1) climatic bubo, and (2) venereal bubo, the latter term including buboes in patients who were suffering from gonorrhœa or soft sore (ulcus molle). As yet there is a strict line drawn between the so-called climatic bubo and the venereal bubo, despite the fact that most authorities now place climatic bubo among the venereal diseases. Hanschell,[1] who made an intensive study of the condition, stated that the diagnosis depended upon four criteria: (*a*) inguinal adenitis and peri-adenitis; (*b*) absence of known more or less common lesions about the genital and anal area; (*c*) fever; and (*d*) a history indicating that the condition has developed after coitus in the tropics or subtropics. From this it appears that the presence of a definite venereal lesion

precludes the diagnosis of climatic bubo; yet it seems reasonable to assume that climatic bubo may coexist with another venereal disease. In other words, many cases, perforce diagnosed as venereal buboes, may be in reality climatic buboes superimposed on a venereal lesion. It is in connexion with such a combination of diseases that Frei's intradermal reaction [2 3] becomes so valuable. This specific reaction is carried out in a similar manner to the Mantoux test for tuberculosis; the antigen or injected material is obtained by gland puncture from an unequivocal climatic bubo, and a positive reaction is indicated by a localised cutaneous reaction around the site of injection, having a maximal development within 48 hours. Frei's reaction was therefore performed on some of the later patients of this series, but the antigen became contaminated and the preparation of a new one was not considered consistent with the final principles of treatment, which did not admit of aspiration of buboes.

The cases recorded below represent our joint experience of treating climatic bubo and allied diseases from 1926 until June, 1933. Throughout the series certain recognised methods of treatment for inguinal adenitis were tried and the results noted. From such observations an attempt was made to evolve a reasonably satisfactory method, and it is claimed that this attempt has met with some success.

### EVOLUTION OF THE TREATMENT

The methods of treatment under trial may be mentioned under three rough headings:—

(1) *Purely local treatment* by the excision of the affected inguinal glands.

(2) *Protein shock therapy*, with or without local treatment by aspiration or incision of affected glands. The method was recommended by Hanschell,[1 4] and consisted of one to three intravenous injections of T.A.B. vaccine in doses of 50 to 200 millions, with an interval of four or five days between the injections.

(3) *Intravenous injection of tartar emetic.*—Antimony has not infrequently been used abroad in the treatment of climatic bubo. Günther [5] and De Bellard [6] recommended intravenous stibenyl, and Destephano and Vaccarezza [7] have successfully treated a large series of cases with intravenous tartar emetic. It is by a modification of the technique of the last-mentioned investigators that the best results have been obtained in the present series (Table I.).

TABLE I.—*Results of Treatment in all Cases*

| Cases. | Year. | Method of treatment. | Average disability period in days. |
|---|---|---|---|
| 2 | 1926 | *Method 1.*—Excision of affected inguinal glands. | 90 |
| 43 | 1927<br>1928<br>1929<br>1931 | *Method 2.*—Protein shock therapy, by intravenous T.A.B. vaccine. (In 16 cases also intravenous N.A.B.) | 46·6 |
| 36 | 1931<br>1932<br>1933 | *Method 3.*—Intravenous tartar emetic. | 28·8 |

81 = Total number of patients.

The patients treated by the first and second methods of treatment summarised in this table were all clinically diagnosed as suffering from climatic bubo, and details of these cases have been already published.[8] Hanschell [1] has claimed that protein-shock treatment in his hands converted a long and incapacitating illness into a comparatively short one lasting one to three weeks, but in the main this was not confirmed by our series as is demonstrated by the average disability period (46·6 days).

It was the original intention to treat by tartar emetic injections climatic bubo patients alone; but latterly, as the results appeared so favourable in climatic bubo, it was decided to widen the scope and include patients who had buboes, and were also suffering from gonorrhœa or ulcus molle. In the case of these latter diseases tartar emetic injections were used as an adjuvant only and did not replace the customary local or general treatment. It should be noted, however, that obvious syphilitic patients proved by the Wassermann or Kahn tests have not been included in this series.

### TREATMENT BY INTRAVENOUS TARTAR EMETIC

By June, 1932, observations had compelled the conclusion that intravenous tartar emetic was the most satisfactory method of treatment yet employed, and one which merited more intensive trial. Accordingly all other methods were abandoned. Further study of the tartar emetic treatment and its effects led to the adoption of a modification of the original procedure with a definite improvement in the results.

(1) *The original method.*—The injections are given every three or four days, the dose of the drug in the first injection being gr. ½, in the second gr. 1, and in the third grs. 1½. The latter is the maximal dose. The duration of the treatment is of course regulated by the results. The patient is prepared before each injection by the achievement of free bowel movement and by the administration of glucose on the night previous to, and also on the morning of, the injection. The glucose acts as a guard against tissue injury, especially hepatic.

It is essential that the tartar emetic solution should be made up fresh on each day of injection. The exact amount of drug to be used is weighed out and placed in a sterile glass beaker. The solvent for making the solution is sterile distilled water, and the volume of solution for each injection is 10 c.cm. The injection is given very slowly in an attempt to avoid any reaction, which takes the form of a dull aching at the elbow and shoulder of the arm in which the injection is being given, and often after the injection is finished laryngeal irritation with violent coughing. Nausea and vomiting also may rarely be caused. In order to reduce the chance of a reaction to a minimum the injection should take *at least five minutes.*

(2) *The modification* differs from the original method in the time employed in giving the injection. It appears that to get the best results it is desirable to produce in the patient a well-marked though transient reaction. The symptoms produced do not seem to be of serious pathological significance. The modification then consists in giving the drug rapidly enough to ensure the production of a reaction. The progress of cases, in which a reaction was produced with every injection, was consistently more satisfactory than that of cases in which the temporary comfort of the patient was considered, and the injections slowed down to obviate any reaction. The average time of injection required to produce a reaction is *three minutes.*

### EFFECT OF LOCAL SURGICAL TREATMENT

When the trial of treatment with intravenous tartar emetic was begun it was customary to back it up with local surgical measures, if they were considered necessary. Softening and breaking-down of a bubo was usually treated by incision with evacuation of the pus or by single or repeated aspiration. The occurrence of secondary bacterial invasion resulting from these methods was so obviously a disadvantage that eventually incision and aspiration were abandoned. It came to be considered essential to avoid if possible any break in the skin over the bubo, even in the presence of fluctuation.

In most cases treated with tartar emetic absorption of the pus and resolution of the inflammatory reaction

in the bubo occurred gradually but surely. If by a mischance the bubo leaked or underwent a spontaneous rupture the opening was well cleansed with spirit and closed by a collodion dressing. This principle of non-interference with the bubo seems to be an important point in the tartar emetic treatment.

TABLE II.—*Results of Treatment with Intravenous Tartar Emetic*

ORIGINAL METHOD

| Case. | Age. | Year in which treatment commenced. | Condition.* | Injections. | Total dosage (grains). | Remarks. | Disability period (days). |
|---|---|---|---|---|---|---|---|
| 1 | 33 | 1930 | C.B. (L.) | 10 | 12½ | Asp. once † | 26 |
| 2 | 31 | ,, | C.B. (R. & L.) | 12 | 15 | Repeated asp.† | 60 |
| 3 | 25 | ,, | C.B. (L.) | 11 | 15 | Asp. once.† | 40 |
| 4 | 23 | 1931 | C.B. (R. & L.) | 12 | 15 | Repeated asp.† | 52 |
| 5 | 23 | ,, | C.B. (R.) | 12 | 16 | Asp. and later incision.† | 43 |
| 6 | 34 | ,, | ,, | 12 | 16 | Incision.† | 44 |
| 7 | 37 | ,, | ,, | 7 | 9 | No aspiration. | 25 |
| 8 | 25 | ,, | ,, | 7 | 9 | Incision.† | 25 |
| 9 | 41 | ,, | ,, | 16 | 19½ | Incision twice.† | 56 |
| 10 | 34 | ,, | ,, | 8 | 10½ | Incision.† | 37 |
| 11 | 38 | 1932 | ,, | 7 | 9 | No aspiration. | 23 |
| 12 | 39 | ,, | ,, | 4 | 4½ | ,, | 16 |
| 13 | 27 | ,, | ,, | 8 | 10½ | ,, | 25 |
| 14 | 22 | ,, | ,, | 7 | 9 | Aspiration.† | 24 |
| 15 | 28 | ,, | C.B. (L.) | 7 | 9 | ,, † | 24 |
| 16 | 37 | ,, | ,, | 4 | 4½ | No aspiration. | 18 |

MODIFICATION OF ORIGINAL METHOD

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 17 | 29 | 1932 | C.B. (L.) | 8 | 10½ | Aspiration.† | 35 |
| 18 | 27 | ,, | V.B. (R. & L.) G. | 8 | 10½ | No aspiration. | 21 |
| 19 | 25 | ,, | ,, | 10 | 13½ | ,, | 34 |
| 20 | 30 | ,, | V.B. (L.) G. | 4 | 4½ | ,, | 12 |
| 21 | 24 | ,, | V.B. (R.) G. | 8 | 10½ | ,, | 26 |
| 22 | 26 | ,, | C.B. (R.) | 10 | 13½ | ,, | 36 |
| 23 | 22 | 1933 | V.B. (R.) U.M. | 7 | 9 | ,, | 23 |
| 24 | 24 | ,, | ,, | 10 | 13½ | Spontaneous rupture healing slow. | 62 |
| 25 | 28 | ,, | C.B. (R. & L.) | 4 | 4½ | No aspiration. | 16 |
| 26 | 23 | ,, | ,, | 6 | 7½ | ,, | 20 |
| 27 | 24 | ,, | C.B. (L.) | 9 | 12 | ,, | 31 |
| 28 | 27 | ,, | V.B. (R. & L.) U.M. | 6 | 7½ | ,, | 21 |
| 29 | 29 | ,, | V.B. (L.) U.M. | 9 | 12 | ,, | 31 |
| 30 | 22 | ,, | C.B. (L.) | 7 | 9 | ,, | 23 |
| 31 | 23 | ,, | V.B. (R. & L.) U.M. | 4 | 4½ | ,, | 14 |
| 32 | 25 | ,, | V.B. (L.) U.M. | 6 | 7½ | ,, | 21 |
| 33 | 20 | ,, | ,, | 6 | 7½ | ,, | 19 |
| 34 | 32 | ,, | C.B. (L.) | 4 | 4½ | ,, | 14 |
| 35 | 33 | ,, | V.B. (R. & L.) U.M. | 6 | 7½ | ,, | 22 |
| 36 | 25 | ,, | C.B. (R.) | 6 | 7½ | ,, | 20 |

* C.B. = climatic bubo; V.B. = venereal bubo; (R.) = right; (L.) = left; G. = gonorrhœa; U.M. = ulcus molle. † Cases tampered with surgically. Asp. = aspiration.

The results set out in Table II. may be summarised as follows:—

A.D. = Average disability period in days.

| | | A.D. |
|---|---|---|
| All cases treated by tartar emetic .. .. | = 36 | 28·8 |
| Cases treated by the original method (all climatic bubo) .. .. .. .. | = 16 | 34·2 |
| All cases treated by the modification (mixed diseases) .. .. .. .. .. | = 20 | 24·6 |
| Climatic bubo cases treated by the modification .. .. .. .. .. | = 8 | 23·3 |

Two more points are brought out by the figures; in the case of 12 patients in which aspiration or incision were performed the disability period was 38·9 days, whereas in the 24 patients in which no surgical interference of any description took place the disability period was only 23·9 days. It will thus be seen that the introduction of tartar emetic treatment in the earlier cases of the series reduced the disability period of climatic bubo from an average of 46·6 days per patient, treated by protein shock, to 34·2 days; and approximately yet another 10 days per patient has been saved by the modification which was introduced in October, 1932, and also the treatment has been successfully extended to patients suffering from venereal buboes.

Statistics are always somewhat dangerous, and it is possible by excluding all cases tampered with surgically in the whole tartar emetic series to demonstrate a slight but definite advantage, in rapidity of recovery, in the untampered cases of the earlier period, when the original method of administration was in use. However, with a little consideration it will be evident that these earlier untampered buboes represent only the mild infections of the earlier period, whereas the untampered cases treated by the modified method (19 out of 20 patients) include buboes of all grades of severity.

It should be noted also with regard to the second series of cases that though the majority of these buboes broke down sufficiently to allow definite fluctuation to be obtained, and in many cases the skin over the swellings became red and adherent to the glands in all except one (Case 24), satisfactory and rapid resolution of the buboes occurred without open suppuration, improvement being already noticeable within two or three days of the commencement of treatment.

As regards the total amount of tartar emetic used, in the original method the number of injections ranged from 4 to 16 per patient and the total quantity of tartar emetic given from grs. 4½ to 19½ (average 11½). Since the modified treatment has been in use, though the number of injections has not been less than four, it has never exceeded ten, and the total quantity of the drug administered has varied between grs. 4½ and 13½ (average rather less than grs. 9).

The above compares favourably with the results published by Destephano and Vaccarezza,[7] who in 73 cases required more tartar emetic per patient. Their minimal doses were grs. 5 to 11, given in four to eight injections; this was sufficient to cure rather less than two-thirds of their patients, the remainder requiring grs. 14 to 47 given in 10 to 32 injections.

## COMMENTS AND CONCLUSIONS

These observations indicate that intravenous tartar emetic is the most effective method of treating the chronic inguinal adenitis of climatic bubo and allied diseases which we have so far employed. Further, it appears that the best results are to be obtained by modifications of the original technique.

It is claimed that the disability period can be reduced to its minimum if two points are borne in mind throughout the treatment. They are: (1) administration of tartar emetic with sufficient rapidity to cause a definite reaction; (2) resolute avoidance, so far as is practicable, of all local surgical treatment in order to avoid secondary bacterial invasion of the inguinal glands.

We are indebted to the Medical Director-General of the Navy for permission to publish these notes.

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# CLINICAL AND LABORATORY NOTES

## CHLOROMA

### REPORT OF A CASE IN A CHILD WITH POST-MORTEM FINDINGS

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THE exact relationship between chloroma and the leukæmias is still not fully understood, but the view is held generally that the blood changes in chloroma consist in an overflow of the tumour cells into the blood, and that such tumour cells may be either of myeloid or lymphatic origin.

The characteristic feature of the disease is a firm tumour growth, generally in the orbits, starting first on one side and then quickly involving the opposite side. The eyes become prominent and the conjunctivæ take on a greenish colour. The tumour grows quickly, and metastases occur throughout the body with great rapidity and cause death within a few weeks of the onset of symptoms. Examination of the blood shows the presence of primitive cells which may apparently be either myeloblasts or lymphoblasts, though most of the cases which have been fully investigated have been thought to be myelogenous in origin. The number of such cells in the blood is extremely variable, but the leucocytosis is seldom as marked as in the leukæmias.

Three previous cases were reported by us in THE LANCET in 1923 and 1928, when a wider survey of the condition was given; this report is supplementary to our previous communications. It is curious to note that the four patients were males and had many features in common.

The case here reported is that of a boy aged 9 years, admitted to the Booth Hall Hospital for Children on March 22nd, 1933. He had not been in good health for about two months, but prior to this he had always been healthy. On admission he was fairly well nourished, the only symptom complained of being pain in the back. Four days after admission the left eye was found to be slightly prominent, and the conjunctiva became a pale greenish colour. The right eye started in a similar way two days later. Dr. T. M. Bride, ophthalmic surgeon, reported that "the movements of both eyes are good, but there is much proptosis, conjunctivitis, and ulceration. The discs are normal." The boy complained of much headache and lost weight rapidly. Firm tumour growths filled the orbits and the temporal fossæ to an increasing extent, until death took place five weeks after admission to hospital. Examination of the blood gave the following results:—

| | April 7th. | | April 19th. |
|---|---|---|---|
| Red blood-cells | 2,604,000 per c.mm. | .... | 1,612,000 per c.mm. |
| Hb. | 58% | .... | 35% |
| Colour-index | 1·1 | .... | 1·1 |
| Leucocytes | 22,000 per c.mm. | .... | 14,000 per c.mm. |
| Polymorphonuclears | 15% | .... | 19% |
| Lymphocytes | 13% | .... | 27% |
| Large mononuclears | Nil | .... | 2% |
| Eosinophils | „ | .... | Nil |
| Mast cells | „ | .... | „ |
| Myelocytes | 1% | .... | 2% |
| Myeloblasts | 71% | .... | 47% |
| Premyelocytes | Nil | .... | 3% |

The red cells show slight anisocytosis, but no definite poikilocytosis. At the first examination one normoblast and one megaloblast were seen per each 100 leucocytes, but at the second there were 5·5 normoblasts and one megaloblast. Blood-platelets were scanty at each examination.

The oxidase reaction (Shaw Dunn's method) on the cells classified as myeloblasts was negative, but the cells were possibly too primitive to give a positive result. In films stained with Leishman's stain the myeloblasts were roughly equal in size to the polymorphonuclears and had a large, round, deeply staining nucleus often showing two, three, or four nucleoli. The cytoplasm formed a rim around the nucleus and was basophilic and non-granular.

The urine was tested for Bence-Jones proteosuria with a negative result.

#### POST-MORTEM EXAMINATION

The body was thin and emaciated with bilateral proptosis and definite sloughing of each cornea; the surface of the body showed many small subcutaneous tumours.

*Lymphatic glands.*—The bronchial, cervical, dorsal, lumbar, axillary, and inguinal glands were enlarged, firm, and on section showed the typical chloromatous grass-green coloration.

*Bones and joints.*—There were small greenish tumours at the costochondral junctions on each side, and there was a large green tumour on the deep aspect of the upper half of the sternum. The rib-marrow was red; that of the tibia brownish, with a greenish tinge in places.

*Heart.*—Subpericardial petechial hæmorrhages were present. The heart was small and pale, and near the auriculo-ventricular groove was a firm greenish tumour mass.

*Lungs.*—There were tumour deposits on each parietal pleura, but not under the visceral pleura. The lungs showed no abnormality.

The *liver* was pale in colour and firmer than normal. A greenish colour was visible in the portal areas, but no discrete tumour masses were found.

The *spleen* was enlarged, weighing 110 g., of normal shape and consistency.

*Kidneys.*—Right: general slight greenish coloration. Left: one small cortical growth and general slight green colour.

*Skull.*—Removal of the roofs of the orbits revealed thick masses of greenish elastic tissue extending across the orbits. These masses did not invade the eyeball, but extended backwards along the optic nerves and were continuous with tumour growth in the pituitary fossa. There was no erosion of bone. Many small growths were present on the outer surface of the skull, one of which had ulcerated through the scalp. The brain showed no macroscopic abnormality.

*Histology.*—The tissues from the orbital masses and from the other tumour deposits showed similar histological appearances, consisting of loosely packed tumour cells in a delicate reticulum. The cells were small, round or angular, with medium-sized, deeply staining nuclei showing no definite chromatin differentiation. The cytoplasm was definitely acidophilic. There were a few larger cells with faintly staining nuclei, probably of reticular origin. No giant cells were seen; the vascularity was poor. A section from the tumour mass in the auriculo-ventricular groove showed typical tumour growth infiltrating the cardiac muscle. The lymph glands and the spleen both showed a definite infiltration of tumour cells, but there was no evidence of hyperactivity of the lymph follicles. The liver and kidneys showed small collections of tumour cells, but no massive infiltration.

The oxidase reaction was negative in frozen sections of the various tumour masses, but in spite of this the character of the cells and the obvious lack of any sign of hyperactivity on the part of the lymphoid tissue, taken in conjunction with the blood picture, shows that the case was probably one of chloroma of myelogenous origin.

Chloroma is a rare disease in children, and this case is noteworthy for the number and size of the tumour growths.

We wish to thank Dr. John D'Ewart, medical superintendent of Booth Hall Hospital, for permission to publish this case.

## RAPID BONE REGENERATION FOLLOWING DIAPHYSECTOMY OF THE CLAVICLE

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THE report in THE LANCET of Dec. 2nd, 1933, on the annual general meeting of the British Orthopædic Association held in Edinburgh on Nov. 24th and 25th contains the following paragraph :—

Mr. D. M. GREIG (Edinburgh), speaking on acute osteomyelitis and repair of fractures, said that bone was at the mercy of its blood-supply and was decalcified by the hyperæmia of infection, injury, neoplasm, and disuse. In acute osteomyelitis the liberated calcium was redeposited within the periosteum to form the new involucrum. The operation of diaphysectomy removed the available calcium and accounted for failure of bone regeneration; it should never be performed until the new bone was well developed.

FIG. 1.—Bone removed at operation.

It is difficult to reconcile the last sentence with clinical experience based upon observations in cases in which diaphysectomy has been carried out as an immediate procedure in acute osteomyelitis of the fibula, clavicle, ulna, metatarsals, and the femur, and in all of which abundant regeneration of bone occurred rapidly. I had the opportunity of seeing a case at St. Bartholomew's Hospital in which Mr. Geoffrey Keynes demonstrated a well-regenerated femur following an extensive diaphysectomy for acute osteomyelitis.

The following case is noteworthy for the extreme rapidity of bone redeposition.

FIG. 2.—Radiogram taken 22 days after operation.

I was asked to see in consultation with Dr. Ivor Davies and Dr. W. Phillips, of the medical unit of the Welsh National School of Medicine, Cardiff Royal Infirmary, a boy of 14 suffering from extreme pain in the region of the right acromioclavicular joint and with a temperature of 102.° He was known to be suffering from a severe staphylococcal infection of the accessory nasal sinuses. We agreed upon a diagnosis of osteomyelitis of the clavicle. I operated and opened the outer end of the clavicle and evacuated pus which contained staphylococci. The temperature fell, but three days later the length of the clavicle was exquisitely tender. I operated again, found pus under the periosteum and proceeded to complete diaphysectomy of the clavicle. (Fig. 1 shows the removed bone.)

Progress was satisfactory and the wound rapidly healed. Ten days after operation a large mass of callus was palpable. The patient, who until then had been immobilised with a long sand pillow between the the scapulæ, was now allowed to use the arm freely. Fig. 2 reproduces a radiogram taken 22 days after the diaphysectomy had been performed and shows a massive bone deposition. Fig. 3 shows the restoration of function in the limb; this photograph was taken 34 days after the clavicle had been removed. At this time palpation revealed a normally outlined clavicle.

FIG. 3.—Photograph showing restoration of function (34 days after operation).

The case is an example, amongst many, of the rapidity with which new bone is refashioned after the subperiosteal removal of the shaft in acute osteomyelitis, especially in young subjects.

I am grateful to Prof. A. W. Sheen, director of the surgical unit, for permission to publish these notes and to Dr. Owen L. Rhys for the radiograms. Also to Mr. R. Hogan, of the surgical unit laboratory, for the photograph.

## MIGRATION OF A GRÄFENBERG RING

By MARGARET C. MURPHY, M.B. CALCUTTA, M.R.C.S. ENG., W.M.S.

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A JAPANESE lady consulted me in June, being very distressed because her monthly period was overdue. Her husband wrote saying she had had two difficult labours with living children, six and eight years previously and had been advised to avoid pregnancy in future. She had had an induced

Radiogram of pelvis, showing the ring.

abortion three years ago, and after trying various "poisonous remedies" as contraceptives had had a Gräfenberg ring inserted by a civil surgeon about 15 months before she came to see me. This ring was changed a year later by another doctor, and she suffered from "functional disorders." It was therefore removed and a third ring was inserted by yet another doctor on March 19th, 1933. The patient declared that this ring was put "very high up" with instruments, and that after its insertion she had pain in the lower part of the back, chiefly on the right side, and difficulty in walking for about a week. Her last period had occurred on May 10th and lasted for three or four days. She complained of feeling sick and of difficulty in defæcation and micturition. When she was examined on June 21st her uterus was bulky and deflected slightly to the left, and an X ray examination showed the ring high on the right side and obviously outside the uterus (see Figure).

She was admitted into hospital on June 28th and operated on on the 30th. On opening the abdomen a part of the ring was visible shining through the peritoneum of the right broad ligament, a little below the round ligament and about half an inch to the right of the uterus. The peritoneum was incised, and the ring, which was embedded in the broad ligament, was divided and drawn out. The peritoneum was sutured, the patient sterilised, and a small ventral hernia repaired.

The uterus was definitely enlarged and pregnant. Recovery was uneventful and the pregnancy is continuing.

# MEDICAL SOCIETIES

## ROYAL SOCIETY OF MEDICINE

### SECTION OF OBSTETRICS AND GYNÆCOLOGY

AT a meeting of this section held on Dec. 7th the chair was taken by Prof. W. BLAIR BELL, the president, and Prof. S. ASCHHEIM read a paper on the presence and effects of

#### Female Sex Hormones and Gonadotropic Substances

The ovary, he said, produced several hormones, two of which were known: the œstrogenic hormone formed in ripe and ripening Graafian follicles, and the luteal hormone. The former was responsible for œstrus, and had been obtained some 20 years ago from ovaries and placentæ. There were five chief tests for its recognition. The uterine growth test was of great practical significance. The uterus of castrated animals, under the influence of this hormone given per os or subcutaneously, showed marked proliferation and hyperæmia. The vaginal œstrus (Allen) test was based on the fact that the hormone produced œstral changes in the vagina: desquamation of the horny cells into the lumen. A similar change was produced by vitamin-A deficiency. The mammary growth test was evidence of breast proliferation in castrated animals, even males. The chrome-cell and ganglion-cell regeneration test was also performed on castrates. Castration reduced the number of chromatophil cells in the ganglion cervicale uteri of the adult mouse from 3·5 to 1 per cent. Œstrus hormone raised it again to 8 per cent., a figure corresponding with that of pregnancy. After castration the ganglion cells degenerated, and this also was remedied by the hormone. The regeneration test was founded on the disappearance, under this hormone, of the castration cells in the anterior pituitary.

The physician would wish to know the application of these tests to his patients. The first test showed that the hormone was of value for atrophic uteri. Even in the early days clinical reports of the success of the œstrus-producing hormone in infantilism had not been wanting, although only of recent years had the hormone been available in quantity. Those who had insisted on large dosage were quite right, but in climacteric disturbances quite small amounts per os were sufficient. The changes in the vagina had no exact parallel in woman and the vaginal effects were of no importance at present.

The hormone could be demonstrated in ripening Graafian follicles and in the corpus luteum, and thence went into the blood; its excretion in the urine ran parallel with its presence in the blood. In pregnancy the blood content rose, and excretion could be demonstrated from the eighth week onwards. This discovery was of great importance for therapeutic purposes. Probably the placenta was the chief producer during pregnancy; it contained some 1500 to 2000 mouse units at term. Its activity probably accounted partly for the growth of the uterus and the laying down of the new blood-vessels, though other factors might play a part also, since in extra-uterine gestation the uterus grew until it reached the three-months' size, but no more, although the hormone was produced as freely as in normal pregnancy. Probably the presence of a placenta stimulated uterine growth. Whether the hormone played a part in the fœtal economy was yet unknown; the uterus of the new-born child was larger than that of the one year old child, and the mammæ swelled after birth. Administration of the hormone to premature infants seemed to help their growth.

Young girls might show a severe menorrhagia associated with cystic hyperplasia of the uterus similar to that sometimes seen at the climacteric. This condition was probably due to excessive hormone production, as was also that type of ovarian tumour associated with uterine hyperplasia—granulosa-cell tumour. Examination of the urine might therefore help the diagnosis of ovarian tumour. The œstrus hormone had been obtained from testicles and the urine of males; its presence was not therefore of any help in determining the sex of hermaphrodites. It was found in the urine of pregnant cows, mares, and monkeys. It should be called the œstrogenic or œstrus hormone rather than the female hormone, for it was also found in vegetables—for example, the potato. It accelerated the production of flowers and fruit. Certain petroleum oils also contained appreciable amounts of it, as much as 2000 mouse units per kg., and an investigation of various bituminous products, such as naphthalene, brown coal, asphalt, and peat also revealed it. Peat and coal extracts had a marked œstrogenic effect on the female genital organs of experimental animals, and caused mammary proliferation. There was a whole series of chemical substances with an œstrogenic action. Five to ten minutes after the injection of the hormone the oxygen consumption of the uterus definitely rose; a rise might be produced by other substances, but never so rapidly.

##### THE HORMONES OF THE CORPUS LUTEUM AND PITUITARY

The luteal hormone produced the secretory phase of development of the uterus when the proliferating

phase had been reached. This secretory phase was necessary for the nidation and early development of the fertilised ovum. In the premenstrual and pregnant uterine mucosa were found glycogen and a vitamin-containing lipoid. The hormone prevented the ripening of fresh follicles and suspended the sensitivity of the uterus to oxytoxin.

The gonadotropic hormone of the anterior lobe of the pituitary had been hypothecated in 1905 by Heape. Removal of the pituitary was followed by atrophy of the gonad. Five days after injection of the gonadotropic substance the ovary showed large and hæmorrhagic follicles and the uterus was swollen; this was the effect produced by the urine of pregnant women. There were three test reactions: the formation of large follicles, sometimes accompanied by bursting and the appearance of normal corpora lutea; the formation of blood follicles and islets of hæmorrhagic tissue; and the formation of corpora lutea containing ova (atretic corpora lutea). The first was a physiological reaction; the other two were pathological. Occasionally only one change was found as a result of implanting a fragment of anterior pituitary—viz., the formation of interstitial glands by overgrowth of theca cells. The anterior pituitary was the motive power of sexual function in the female, but only partially in the male. That it controlled the male was shown by the fact that sexual function ceased after its removal, but after castration the hormone production in the pituitary continued and even increased. The placenta, decidua, pregnant corpus luteum, and blood-serum gave all three test reactions, but the hormone rapidly disappeared from the blood after delivery. The question of what happened to them had led the lecturer to discovering them in the urine, and to the test reaction for the diagnosis of pregnancy. In more than 13,000 cases now on record the original technique had shown an accuracy of 98·25 per cent. The hormones had been found in the urine of pregnant monkeys and mares. The gonadotropic substances were found in man in the amniotic fluid and the blood of newly born children, being excreted during the first few days of life. Their function was unknown; they might assure the continued function of the corpus luteum. Chorion epithelioma and hydatidiform mole could be diagnosed with considerable certainty by means of this test.

### THE FOLLICLE-RIPENING FACTOR

The first test reaction—i.e., the formation of large follicles—was obtained from injection of urine from patients with endocrine disorders like Graves's disease and myxœdema, climacteric and castrated patients, and women with cancer. The first reaction was therefore useless for the diagnosis of pregnancy. The distinction had suggested that the first reaction might be produced by a different substance altogether from that producing the other two. Experiment had shown that it was possible to obtain these two apart from the first, and vice versa. He had therefore called the two factors the follicle-ripening and the luteinising factor respectively. He had then experimented on the bursting of the follicle in the infantile mouse. In most animals the follicle burst spontaneously during heat, but in the rabbit and ferret it burst 12–18 hours after coitus, and bursting could be prevented if the pituitary were destroyed an hour (but no more) after coitus. Anterior pituitary extract produced bursting of the follicle. The process in the sexually mature ovary was as follows: at puberty the follicle-ripening hormone produced maturation of the follicle, and after this typical œstrous changes occurred in uterus and vagina. Then for some reason unknown the luteinising factor became operative, the follicle ruptured and a corpus luteum was formed. The rupture was not mechanical but hormonal. The follicle could be made to rupture in infantile animals by injecting the two factors one after the other—e.g., first the urine of castrates, and then ammoniacal extract of anterior pituitary. The hypophysis of infantile animals contained active gonadotropic substances before puberty, but these had no effect on the ovary beyond causing some enlargement of the granulosa cells, because the substances did not work until the ovary had been sensitised by the follicle-ripening hormone. Administration of the two factors in the right order would, Prof. Aschheim was convinced, give good therapeutic results in cases of amenorrhœa due to ovarian insufficiency resulting from a functional disturbance of the hypophysis. A mixture of the two factors could produce only fortuitous results.

Certain changes in the ovaries of pregnant women could only be explained as the result of abundant quantities of these gonadotropic substances—for example, overgrowth of the theca in atretic follicles. If the body were flooded with the hormones, as in hydatidiform mole, large lutein cysts were formed. Anterior pituitary hormone should be cautiously used, because the women to be treated had not usually many follicles in their ovaries, and those they had needed to be preserved. In the field of hormone research individual glands had to be selected out of the "incretorium" for study, and then replaced so that they might once more collaborate in the "consensus partium" of the endocrine system. The function of endocrine glands depended closely on vitamins, and coöperation of all branches of research was needed for the solution of the problem.

### DISCUSSION

Prof. E. C. DODDS emphasised the importance of the work of Prof. Aschheim and Prof. Zondek in the study of these hormones. He described an investigation on an ovariectomised pregnant woman who went to term. Both œstrin and prolan were excreted in approximately normal amounts, so that the ovary could not be their source. Many compounds excreted by pregnant animals could produce œstrus, but they differed markedly in their chemical properties. The œstrus lock could be opened by a skeleton key very little related to œstrin. Therefore caution was necessary in the study of œstrogenic substances, as, for instance, those in coal and anthracene. He was not convinced of the existence of two prolans, and thought the histological evidence a dangerous ground for argument; he would like to see the follicle-producing and luteinising substances in two separate and distinct bottles.

Mr. A. S. PARKES, D.Sc., asked Prof. Aschheim to elaborate his views on the source of œstrin in the non-pregnant animal (the substance was produced in animals deprived of Graafian follicles) and on the possible identity of the substances in pregnant urine, in the anterior pituitary, and in the placenta. The three seemed likely to be closely related chemically, if not identical.

The PRESIDENT pointed out that Prof. Aschheim was a busy practising gynæcologist, and his work settled the question whether clinicians were fitted to do research work. He, also, would like to know the grounds for believing in the existence of two prolans. The effects of castration supported the belief in two, but the corpus luteum and the granulosa cells were antagonistic. The ripening of the follicle, followed by the formation of the corpus luteum, needed much explaining if the two were not parts of one

physiological process. He believed that cancer would give the pregnancy test. About a year ago he had seen a girl of 14 with ovarian sarcoma, and the Zondek-Aschheim test had been strongly positive, not quite as strongly as in chorion epithelioma. After incomplete operation the test was still positive. After lead treatment she became well, and the test had remained negative. Other patients had shown similar results. Granulosa-cell cancer might be due to some stimulus such as the anterior pituitary, but it often appeared after the menopause. If the stimulus was external, why should the growth be unilateral? It was often bilateral in younger women, and the answer might be that in older patients only one ovary contained granulosa cells. Much work remained yet to be done. The only proof that the pituitary produced prolan was that pituitary implantations also stimulated the genital organs.

Prof. ASCHHEIM, in reply, referred to his experiments, suggesting that prolan A and B were different substances. He had never seen "A" reactions after giving injections of "B." It was for the chemist to separate them. Possibly œstrogenic substances from the food or from other organs might reach the blood stream, but the production of prolan by other glands was not proved. He thought the girl described by the president had had a chorion epithelioma ectodermale as described by Pick; these growths were seen in men, women, and children. One kind of pituitary cell must produce more than one hormone; it was not yet possible to say which cells produced which substance.

## CLINICAL SECTION

THE meeting of this section held on Dec. 8th, under the presidency of Dr. BERNARD MYERS, was devoted to a consideration of

### Diseases of the Suprarenal Gland

and to the demonstration of illustrative cases and specimens.

Prof. H. H. WOOLLARD spoke on the

#### ANATOMY AND PHYSIOLOGY OF THE ADRENAL

He said that the term adrenal was more suitable on topographical grounds than the more commonly used term suprarenal. The separate nature of the cortex and the medulla was supported by evidence from every angle. The medulla became invested by the cortex in the higher vertebrates; in the lower they remained separate. In the course of evolution the medullary, or chromaffin tissue, as it was called from the staining reaction of the adrenaline granules in its cells, became concentrated and reduced in amount while the cortex increased in size. The *medulla*, the chief representative of the chromaffin system in man, was developmentally formed from neuroblasts which were changed into secretory cells. It was innervated abundantly by the splanchnic nerves and ganglion cells were often found in it. T. R. Elliott discovered that the splanchnic nerves to the medulla controlled the production and the discharge of adrenaline, and that these nerves to the suprarenal medulla were all preganglionic fibres. The transformed secretory neuroblasts of the medulla were the homologues of sympathetic ganglia, and their post-ganglionic fibres had here the form of a chemical secretion, adrenaline, distributed by the blood stream. Adrenaline was both anatomically and physiologically a sympathomimetic substance. The *cortex* was derived from the epithelium of the mesonephric ridge in close proximity to the developing gonad. The cell mass so produced became excavated later by the ingrowing chromaffin tissue. These two parts received their blood-supply from three arterial sources in such a way that each had its own arterial capillary bed, but they shared a common venous plexus and a single efferent vein. Prof. Woollard said that the cortex of the suprarenal is unique in that it undergoes a sudden and considerable reduction in mass immediately after birth. Elliott was one of the first to discover that this reduction is due to the disappearance of the inner portion of the cortex. The function of this transient cortex, which is peculiar to man and the apes, had not been discovered. Despite the subdivisions of the cortex founded on the shape of the cell columns, or on the cell inclusions, or differences in staining, it was probable that the cells are all alike, except that the younger cells are superficial, and the ageing and dying cells are next to the medulla. The cortical cells contained fats, lipoids, and granules. The fats became transformed into more complex double refracting bodies, and as these latter increased so the fats diminished. The granules were true cellular products indicative of secretory activity.

Three functions of the cortex were more or less definitely known: it was a storehouse of vitamin C in those animals, like man and the guinea-pig, which cannot synthesise their own vitamin C. It was essential to life. All animals, except for one or two species that may be preserved by the presence of aberrant cortical tissue, died in about a week after complete adrenalectomy. The animals remained apparently well for a few days and then passed into a state of profound asthenia, followed by convulsions and death. This result could be averted, with complete restitution of well-being, by the use of an extract discovered by Swingle and Pfiffner. Investigation of the changes due to adrenalectomy, now facilitated by the use of Swingle and Pfiffner's extract, showed a retention of waste products in the blood and a profound alteration of carbohydrate metabolism. The very recent work of R. Loeb and his collaborators had further shown that there is an immense loss of sodium from the body. They suggested that the cortex controls the sodium balance of the body in the same way as the parathyroid controls the calcium and the phosphorus balance. The third property associated with the cortex was its proven ability to cause the production of masculinising hormones when it had undergone simple hyperplasia, or more particularly malignant change. These hormones intensified the masculinity of males and produced sex reversal in females. This adrenal-gonad relationship was well founded, and several cases of sex reversal in females had been cured by removal of these suprarenal tumours. Since the gonad alone was the source of the hormone which produces and maintains the accessory and secondary sexual characters, the adrenal cortex must affect the gonad. Though there were chemical and morphological reasons for associating the adrenal cortex, the corpus luteum, and the interstitial cells of the testis, experimental proof of this association was still lacking. The discovery of pituitary basophilism introduced an additional complication, for investigation at the moment suggested that the basophil cells of the pituitary, without obvious changes elsewhere, might produce many if not all of the clinical features seen in women with suprarenal carcinoma. In the present state of knowledge the pituitary might be admitted as a cause of adrenal hyperplasia, but not as a cause of sex reversal, for its gonadotropic hormones acted indifferently upon either the ovary or the testis, and it is the gonad then which elaborated the endocrine activity proper to it.

Dr. T. STACEY WILSON described investigations of the action of suprarenal secretion upon the circulation when given orally as an extract. His communication was illustrated by records of arm pulsation taken with the sphygmomanometer armlet and three types of aneroid pressure gauge. Dr. Wilson had reached the conclusion that the venules played an important part in the maintenance of the blood pressure through the instrumentality of the suprarenal when contracted, and the thyroid when relaxed. Nervous control was of secondary importance in the venules, contrasting with the conditions obtaining in the main arteries. There nervous control was dominant, and endocrine control secondary. Dr. Wilson also produced statistical evidence that an arm pulse volume of 4 mm. at 90 mm. Hg armlet pressure (as recorded by the Tycos aneroid) is associated with the slight cardiac inefficiency liable to occur after influenza and catarrhal ailments in general.

Dr. S. LEVY SIMPSON dealt with

CLINICAL AND PATHOLOGICAL ASPECTS

He said that 75 per cent. of cases of Addison's disease were due to tuberculosis, 20 per cent. to atrophy, and 5 per cent. to other causes, such as syphilis and secondary neoplasm. Atrophy of the adrenal cortex might be associated with atrophy of the pancreas, leading to diabetes mellitus, or with atrophy of the thyroid, leading to myxœdema. The cortical lesion was the essential factor in producing the symptomatology of Addison's disease, although a medullary lesion might play a part in it. There were some 50 symptoms and signs of Addison's disease, practically all of which could be produced in animals by adrenalectomy. It had been stated that pigmentation, low blood pressure, and hypoglycæmia had no counterpart in adrenalectomised animals. This was not, however, true if such animals were kept in a chronic state of insufficiency by inadequate doses of cortical extract. Wasting was a very important manifestation of adrenal insufficiency both in animals and man, whilst hiccup and conjunctivitis were two minor symptoms of considerable significance which were apt to be overlooked. The microcytic anæmia which occurred was probably secondary to the achlorhydria, and responded to iron therapy. A relative lymphocytosis occurred even in the absence of secondary anæmia.

The maintenance dose of cortical extract for different species was: rats, ½ to 1 c.cm.; dogs, 1 to 2 c.cm.; cats, 2 to 3 c.cm.; monkeys, 6 to 12 c.cm.; man, 10 to 20 c.cm. This gave an indication of the practical difficulty of treating the more severe cases of Addison's disease over a long period, although a patient who had recovered from a severe crisis might maintain good health on a dose of 5 c.cm. daily. Dr. Levy Simpson said that comparison between cortical extract and insulin was quite justifiable, but must be qualified by a recognition of the inherent difficulties of administering large quantities of a relatively weak extract. He advocated slow continous intravenous salines and glucose by the drip method in a crisis, as rigors and pyrexia often followed the usual method of administration. In the presence of infection it was essential to double the maintenance dose of extract in the early stages. Some patients were able to leave off taking cortical extract, remaining well for some months; and adequate therapy with cortical extract led to a decreasing daily requirement. If, however, the tuberculous or the atrophic process progressed, the daily dose of cortical extract might have to be correspondingly increased. For continuous therapy the intramuscular or deep subcutaneous route was preferable to the intravenous route, and avoided the danger of the allergic reaction that occasionally occurred. Accessory methods of treatment were: adrenaline by injection and by mouth, whole dried gland by mouth, Rogoff's extract by mouth, sodium chloride, vitamin C, cotton-seed oil, glucose, fluids, and tuberculin. As regards the use of cortin in conditions other than Addison's disease, there was no convincing evidence of its value in myasthenia gravis, muscular dystrophies, most types of neurasthenia, essential hypotension, and hyperthyroidism. It was reasonable, however, to consider its use in certain cases of pregnancy, infection, post-infective debility, the dehydration phases of chronic intestinal obstruction, after severe operations (especially with previous malnutrition), pyloric obstruction, marasmus, diarrhœa, and vomiting; also in hypocorticalism, including, perhaps, one variety of neurasthenia. An interesting recent finding was the high concentration of vitamin C in the cortex. It had been claimed that vitamin C decreases the pigmentation of Addison's disease; but cortical extract, however, did not contain this vitamin. Scurvy and pellagra might occur in Addison's disease, and Addison's disease may occur in chronic pellagra. Malnutrition resulted in hypertrophy of the adrenals, followed by congestion, hæmorrhage, and atrophy.

The clinical manifestations of adrenal tumours were: pseudo-hermaphroditism (masculinisation), homosexual precocity in both male and female and heterosexual precocity in the female, masculinisation of the female, and feminisation of the male. In contrast, adrenalectomy and some cases of Addison's disease showed the following features: cessation of œstrus, abortion, absence of lactation, degeneration of testes, atrophy of seminal vesicles, and changes in pituitary gland. Injections of cortical extract and cortical transplants were, however, disappointingly negative. Further, cortical extract did not repair the atrophy of sex organs following hypophysectomy; nor did it apparently influence the action of testicular extract or of prolan (Korenchevsky and Levy Simpson). It would seem that the secretion of the cells of a cortical tumour (or even of a cortical hyperplasia) was different in quality from that of a normal adrenal gland. In a case of masculinisation of a female, with enlarged clitoris (shown at the meeting), the urine appeared to contain a high content of the male comb growth stimulating hormone. If this preliminary observation were confirmed, it was of considerable significance and might differentiate certain types (or perhaps certain phases) of masculinisation. Harvey Cushing had made an invaluable contribution to the present subject by drawing attention to the occurrence of a basophilic adenoma in certain types of masculinisation. In these cases there was generally a hyperplasia of the adrenal glands, probably secondary. There was, however, no reason for believing that primary tumours of the adrenal glands did not occur and lead to secondary changes in the anterior pituitary in the direction of basophilia. If a basophilic adenoma of the pituitary influenced sex, it would appear that it did so principally by inhibiting the homosexual glands of the individual. Cushing's syndrome could occur in the absence of a basophilic adenoma, as had been seen in the male patient of Leyton, Turnbull, and Bratton, and the female patient of Kepler (Mayo Clinic). The recognition of the pituitary factor by Cushing and the new Ponceau fuchsin stain for the adrenal cortex introduced by Broster and Vines would aid the morbid anatomist in establishing a more certain pathology when future cases came to be investigated.

CASES AND SPECIMENS

The following cases and specimens were shown:

Dr. J. C. HEATHER (introduced by Dr. Gordon Sears): A case of Addison's disease in which the symptoms had appeared since a compression fracture of the first lumbar vertebra three years ago. There was associated syphilis, the Wassermann reaction being strongly positive in blood and C.S.F., and the C.S.F. showing a paretic gold curve. Dr. Stollkind recommended that the patient should not be given malarial treatment, but should receive small doses of arsenic.

Dr. G. M. WAUCHOPE: A case of adrenal insufficiency in a woman of 33, the patient having been under observation for seven years. There had been progressive improvement in the general health, with gradual disappearance of pigmentation during this time, although the treatment had admittedly been inadequate for true Addison's disease. It was suggested that there had been some damage to the adrenal, with a tendency to spontaneous recovery.

Dr. LEVY SIMPSON: A case of Addison's disease, treated during a crisis in 1930 with concentrated cortical extract, with dramatic recovery. The patient has remained in good health during the past three years without specific treatment.

Dr. LEVY SIMPSON and Mr. ALAN BREWS: A woman of 39 with Addison's disease, who had had a subtotal hysterectomy successfully performed whilst under treatment with daily injections of Eucortone. The patient had also been treated with benefit with Dr. Rogoff's cortical extract Interrenalin, administered by mouth.

Dr. LEVY SIMPSON and Dr. C. GORDON-WILSON: A case of Addison's disease (a woman of 31) who developed tetany whilst under treatment in hospital with eucortone. Blood analysis at this time showed a serum calcium value of 11 mg. per 100 c.cm., and plasma phosphorus of 1·5 mg. per 100 c.cm. The spasms ceased almost immediately on injection of 8 c.cm. 5 per cent. calcium chloride solution intravenously.

Dr. DOROTHY HARE and Dr. LEVY SIMPSON: A case of Addison's disease treated for two periods with daily intramuscular injections of Eschatin. The injections were followed by rapid improvement, and the patient remained in good health for three months following the cessation of treatment. Symptoms then recurred. Dr. Hare drew attention to the prohibitive price of cortical extracts at the present time.

Mr. F. W. M. PRATT: A pseudo-hermaphrodite with suprarenal cortical hyperplasia. The patient, a girl of 10½, had shown hypertrichosis since the age of 6. The external genitalia showed marked overdevelopment of the clitoris, with the urethra opening at its base. The labia majora were well developed, but there was no vagina. A laparotomy was performed, and the uterus was found to be very small and continuous with a solid column of tissue representing the vagina. The right ovary appeared normal, the left larger than normal, containing a few follicular cysts. The right suprarenal gland was normal in size, and the left appeared to be slightly enlarged on palpation.

Dr. CLIFFORD HOYLE (for Dr. Cecil Wall): Adrenogenital syndrome in a girl first seen at the age of 18½ complaining of increasing obesity and amenorrhœa, with hirsutes of face and shoulders for one year. She then showed male distribution of pubic hair, marked striæ atrophicæ of breasts, axillæ, thighs, and trunk, plethoric appearance of face, and a consistently raised blood pressure. The external genitalia were normal. The C.S.F. was tested for presence of a pressor substance by injection into a pithed cat, with negative result. In view of the close correspondence with Cushing's syndrome, the patient had been treated with X ray therapy to the pituitary; subsequently thyroid administration and strict dieting had caused decrease in weight and some general improvement. Dr. Hoyle drew attention to the bone changes that often occur in cases of this type. In this instance the serum calcium and plasma phosphorus and controlled radiograms were normal, but there was a slightly irregular calcium balance. The sugar tolerance was raised. The possibility of the raised blood pressure being related to hyperactivity of the pars intermedia of the pituitary must be considered. In the investigation of the C.S.F. of two other cases of this type (Cushing's syndrome) Dr. Hoyle had found one without influence on the blood pressure of the pithed cat or the melanophores of the frog, and one slightly positive in each instance. Thus two out of three of his cases gave no indication that the pars intermedia was excessively active.

Dr. ALISON MACBETH and Dr. LEVY SIMPSON: Two cases of adrenogenital syndrome. The first, a woman of 28, had had irregular and scanty menstruation since its commencement at the age of 17, and hair had been present on the face since 14. At this time the voice was noted as being very deep; the skin had been getting darker recently. She bore a child at the age of 24, but sexual appetite and maternal feelings had been conspicuously absent; she had been troubled recently by clitoric erections. The patient showed increased pigmentation and some hirsutes, with definite enlargement of the clitoris and prepuce. The carbohydrate tolerance was lowered. The second case showed a less marked degree of hypertrichosis, with some obesity and scanty menstruation. The carbohydrate tolerance was lowered. The mothers of both patients died from diabetes mellitus.

Dr. R. C. LIGHTWOOD (by permission of Drs. Frew and Cockayne): Specimens from a case of renal aplasia with cortical adrenal hyperplasia. The patient had been diagnosed as renal rickets at the age of 1½ years, when he showed albuminuria, a raised blood-urea (77 mg. per 100 c.cm.), serum calcium 12·3 mg. and plasma phosphorus 7·2 mg. The skin was then brownish-yellow. A year later he showed, in addition to stunting and rachitic deformities, a localised obesity and slight hirsutes; the genitalia were normal. The blood-urea was 200 mg. per cent. He died six months later from a staphylococcal infection, aged 3 years 4 months. At post-mortem the kidneys were found to be small and sclerotic, with reduction in width of the cortex, and the suprarenals showed diffuse hyperplasia, together weighing more than the two kidneys. The bones showed gross deformity, decalcification, and active rachitic changes.

Dr. R. W. B. ELLIS (by permission of Dr. H. Thursfield): Two specimens, the first from a pseudo-hermaphrodite aged 8 months. The adrenals showed great hyperplasia. There were ovaries, Fallopian tubes, and uterus present, with a vagina ending blindly at its lower end. The vaginal orifice was represented by a dimple in the perineum. Externally, the genitalia were those of a male with first degree hypospadias and absent testicles, there being a well-formed penis with the urethral orifice immediately below the glans, and a small empty scrotum. The second specimen showed bilateral suprarenal hæmorrhage following breech delivery of an infant who had died at the age of two days from an extensive tentorial tear.

Dr. F. GRAHAM LESCHER and Dr. A. H. T. ROBB-SMITH gave the history and pathological findings of a case of carcinoma of the adrenal cortex with Cushing's syndrome. The patient had shown obesity, hirsutes, amenorrhœa, a raised blood pressure, and plethoric appearance; there was a generalised decalcification of most of the bones. A left suprarenal tumour (a cortical carcinoma) was removed at operation. Post-mortem, serial sections of the pituitary showed a minute, non-encapsulated collection of basophil cells (0·3 mm. in diameter), and a percentage of basophil cells of 17 (as compared with a high normal figure of 10 per cent.).

Specimens lent by the Royal College of Surgeons and by St. Bartholomew's Hospital were also shown.

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WARD AND DORMITORY INFECTIONS.—By a slip, which we much regret, some remarks made by Dr. E. K. Le Fleming in the discussion at the Medical Society of London (THE LANCET, Dec. 9th, p. 1318)—beginning "'Pink eye' (infective conjunctivitis) was another annoyance . . ." and ending ". . . on the look out for their earliest symptoms"—were attributed to Dr. J. A. Glover.

# MEDICAL SOCIETY OF LONDON

AT a meeting of this society on Dec. 11th, with Sir JOHN THOMSON-WALKER, the president, in the chair, a discussion was held on

## Staphylococcal Infections

Mr. CLAUDE FRANKAU, in opening, described the staphylococcus as the most treacherous organism met with in surgery; sometimes it was comparatively innocuous, sometimes it was very virulent. Its general effects, however, were constant and characteristic—namely, a tendency to produce thrombosis in blood-vessels and lymphatics, and a necrosis of the tissues. In staphylococcal infections there was little tendency to spread by way of lymphatics, and it was rare for glands to be infected; in these respects the organism differed materially from the streptococcus. Invasion of the blood stream by staphylococci must be very common, though at the time the case was seen there might be little clinical or bacteriological proof of it. Such invasion might be manifested in osteomyelitis, in perinephric abscess, or in suppuration of joints. Most people with these had suffered from boils.

### CARBUNCLE AND ITS TREATMENT

The carbuncle Mr. Frankau defined as an acute infective process, staphylococcal in origin, starting in the subcutaneous tissue and proceeding to necrosis of the affected tissues. It had three clinical stages: invasion, necrosis, resolution. In the first of these, a deep red brawny area was seen, and the infected part enlarged rapidly, to the accompaniment of intense pain, its degree depending on the tension present. Those on the face were more dangerous but less painful than those on the back of the neck and other parts. It was usual for the patient's temperature to rise to 102° F. or over. This stage usually lasted four days, but in a person of low resistance it might persist seven or eight days. There was only a moderate exudate of leucocytes. The necrotic stage was usually heralded by a further rise in temperature, and some decrease in the pain. If untreated, the little pus points in the area coalesced. As soon as openings into the lesion were made, the pain ceased. After sloughing, healing was rapid. The final separation of the sloughs might be accompanied by rigors, since fresh areas were then open to absorption. During this stage secondary gland involvement might occur.

Methods of treating carbuncle varied from masterly inactivity to excision of the whole area of the lesion. A too active intervention was certainly wrong, while inactivity prolonged the suffering unnecessarily. The aim should be to relieve tension without causing much local disturbance or delay in healing. During the invasion, if the pain was not too intense and pyrexia was only moderate, heat should be applied, and analgesic drugs should be given. If the pain was very severe, surgery was essential; it was too often withheld in early stages. The safest method was to make a series of incisions, of gridiron arrangement, ¾ in. apart, confined to the affected area, and not going through the infected mass. Moderate hæmorrhage was checked by compresses of carbolic, left on for two hours; these were also analgesic. In the second stage it was best to cut out, with scalpel or diathermy knife, a circular area of skin amounting to a fourth of the infected area from the centre of the carbuncle, and make peripheral incisions towards the boundary of the infection but not quite reaching the edge; this relieved tension and allowed free drainage, and the protective layer of tissue had not been encroached on. There should be no scraping away of the necrotic mass. Usually the resultant scar was very small with this treatment. The initial dressing should be a light packing with gauze soaked in hypertonic saline; afterwards the carbuncle might be painted with picric acid, and this should be continued until healing was complete. Flavine or brilliant green he had found of little value. Active interference with sloughs was to be deprecated, since blood invasion by cocci was a danger. He had known two patients get septicæmia through the squeezing of boils. Throughout the infection the patient should be fed generously, usually with alcohol in some form. From 7 per cent. to 10 per cent. of patients with carbuncle had been found to be diabetics, and effective control with insulin would greatly lessen its incidence among them. As to subsidiary treatments, he had found vaccines useless, if not dangerous. But the staphylococcus antitoxin recently introduced seemed to have considerable value in early stages and in toxic cases. Of 119 patients with carbuncle within his knowledge admitted into hospital, three died, two of them within 24 hours of admission (one of diabetic coma, the other of septicæmia) and one three weeks later from diabetes.

Mr. Frankau also spoke about perinephric abscess, many cases of which, he said, were seen during the late war in soldiers who had been accustomed to having boils or other staphylococcal skin lesions. Probably these men had had a mild blood infection all the time. Sometimes the condition was secondary to small cortical abscesses on the surface of the kidney.

### DRAINAGE OF ABSCESSES: VACCINES

Dr. HUGH THURSFIELD said that boils arising from sweat glands and hair follicles were the commonest recognised forms of staphylococcal activity. When the organism was found in deeper tissues, it must have got there by blood infection. In the acute stages of staphylococcal pyæmia or septicæmia, when an abscess was brewing in the body, blood cultures were nearly always positive, but when the abscess had been opened, staphylococci disappeared from the blood. When a new abscess began, the organism was again found in the blood, only to disappear once more when the abscess was drained. Provided a staphylococcal abscess could be reached and evacuated, the chance of the patient's recovery was much greater than with streptococcal or pneumococcal infection. Occasionally he had seen infections of the urinary tract which were said to be primarily staphylococcal, but as a rule further investigation showed that the urine was secondarily infected. Staphylococcal empyema he regarded as uncommon, though it was seen occasionally in infants and quite young children; it was quite divorced from any skin or ear infection. For treatment he had often heard mercurochrome praised, but he had not seen success with it. It was very unlikely that any substance of antiseptic value could be got into the body in sufficient quantity and strength to produce a real antisepsis in the presence of pyæmia. He trusted to antitoxic, antimicrobic methods. And he had faith in vaccine treatment; it was rational, and its experimental foundations were sound. He had had special experience with immuno-transfusion.

The most recent case he had had was that of a small baby with a pure *Staphylococcus aureus* empyema, the heart completely on the right side of the chest, blue and gasping for breath on admission, and requiring instant relief. A large needle was put in and 7 oz. of pus was drawn off. On the next day 10 oz. of pus was drawn,

and the next day 7 oz. So much improvement had set in by the third day that the surgeon, who had previously refused to operate, removed a portion of rib and drained. For a time improvement was kept up, but then the child began to go downhill and nothing seemed to check that course. Therefore 750,000,000 of recent staphylococcal culture was given subcutaneously to the mother, and five hours later 300 c.cm. of her blood was drawn off, 250 c.cm. of it being injected into the infant. From that moment recovery was steady.

Work in America and France suggested that bacteriophage therapy of staphylococcal infections was well worthy of trial and consideration.

### TOXOID AND ANTITOXIN

Dr. L. E. H. WHITBY dealt mainly with specific immunisation methods which could be used in the treatment of recurrent staphylococcal infections of the skin, pointing out that until recently no method of controlling the immunity to such infections had been devised which could replace the accurate but impracticable opsonic method of Wright. Many irrational remedies were used in the treatment of such infections, and most of these were merely leucocytic stimulants. If ordinary vaccine was to be used as the specific immunising agent it was possible that intracutaneous inoculation in small doses, following the principles of Besredka, would give better results than inoculation by the subcutaneous route. Experience with antivirus had not yet provided evidence that this substance was of value. The recent discovery of exotoxin-producing strains of staphylococci had given immense scope for an efficient specific treatment of both acute and chronic staphylococcal infections. The toxin was easily convertible into toxoid thus providing an antigen suitable for active immunisation of human beings to which there could be no theoretical objection. Both the toxin and toxoid were good antigens as judged by animal immunisation.

Staphylococcal toxin was composed of a hæmolytic factor, a dermo-necrotising factor and an acute lethal factor. It was possible to estimate the antihæmolytic power of a serum for staphylococcal toxin. Immunisation with toxoid could therefore be controlled by estimations of antihæmolytic titre. Fourteen out of sixteen cases inoculated intramuscularly with toxoid had shown marked clinical improvement coinciding with a five to tenfold rise in antihæmolytic titre. No cases had had toxic or general reactions. Dr. Whitby, unlike some other workers, had found in staphylococcal subjects before immunisation an antihæmolytic titre identical with that of normal persons. Encouraging results from the use of toxoid had been reported from America. For staphylococcal septicæmia and acute toxic staphylococcal conditions, the antitoxic serum prepared by immunising horses with toxin or with toxoid was a valuable remedy.

Dr. R. A. O'BRIEN said that staphylococcal toxoid and antitoxin offered new hope in the handling of cases of these various infections. On the laboratory side the evidence was clear-cut. Toxins would kill laboratory animals; animals could be immunised with toxoid to stand lethal doses, or they could be protected with antitoxin. What were the indications and limitations it was for future work to settle, but he had seen highly favourable results from these measures. The use of toxoid rested on three assumptions: (1) that the antistaphylococcal titre of patients suffering from staphylococcal lesions was lower than it should be; (2) that the titre could be raised by injection of toxoid; (3) that a clinical improvement would coincide with the increase.

### FURTHER DISCUSSION

Mr. WILLIAM IBBOTSON said that in otitis media intracranial complications due to streptococci were much more frequent and serious than those due to staphylococci.

Mr. ZACHARY COPE did not see the need for alcohol in the cases under discussion. He saw no harm in incising a carbuncle beyond the area of the inflamed edge. He always turned four flaps back and undercut until he reached healthy tissue; after removal of necrosed material, and dressing, it healed rapidly. Diet had not been mentioned in connexion with ætiology; he knew people who could produce boils in themselves with certainty by eating the flesh of the pig in any form. Was that because this lowered the resistance to staphylococci?

Dr. H. WARREN CROWE said that 20 years ago he brought forward evidence that white staphylococcus was the cause of rheumatoid arthritis. He believed Nile boil was one of the Plagues of Egypt; it was a kind of super-carbuncle, and he had seen these boils the size of a cocoanut.

Mr. E. D. D. DAVIS spoke of staphylococcal infection in the nasal sinuses, which was always difficult to deal with because there was a good deal of necrosis. Similar infection also occurred in the upper and lower jaws after tooth extractions. He had sporadically tried antistaphylococcal serum, but not with a very happy result.

Dr. R. J. V. PULVERTAFT said that many cases of staphylococcal empyæma were the result of prolonged drainage of ordinary pleural effusions, syringes and needles not having been surgically clean. He had used antistaphylococcal serum in six cases, but had not been impressed by its benefit; two of the patients died.

Dr. J. W. MCNEE said it was quite clear that *Staphylococcus aureus* varied greatly in its virulence. In animals he had several times produced perirenal abscess, and always it was from a small septic infarction in the cortex of the kidney. He was sure that was the only mechanism. He agreed that some people developed boils after taking certain articles of diet.

Dr. GORDON GOODHART thought the majority of cases of renal calculus grew *Staphylococcus albus*. In his experience immuno-transfusion was of no use unless there was leucopenia.

Dr. C. E. LAKIN said that in many cases in which perinephric abscess was diagnosed, *S. aureus* was present. There was a type of case in which stones continued to be formed in the kidneys; he thought that was because the organism broke up the urea and liberated ammonia, phosphates being deposited.

Dr. WALTER BROADBENT said his experience of cases of pneumonia in which staphylococci appeared in the sputum was a sad one; he expected such patients to die.

The PRESIDENT said it had been proved that in blood infection of the kidney the cocci infected the cortex, whereas bacilli affected principally the pelvis of the organ. There might be a long interval between the original infection and the formation of the perinephric abscess, many weeks of apparent health supervening. He thought it was the same infection all the time.

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MEMORIAL TO A MEDICAL MAN.—A cot in the children's wing of the Darlington Memorial Hospital has been presented by local subscriptions in memory of Dr. Llewellyn Nash, who worked for many years in Shildon, near Darlington, and died in 1918.

# REVIEWS AND NOTICES OF BOOKS

## Spread of Tumours in the Human Body

By RUPERT A. WILLIS, M.D., B.S., D.Sc. Melb. Pathologist to the Alfred Hospital and to the Austin Hospital for Chronic Diseases, Melbourne. London: J. and A. Churchill. 1934. Pp. 540. 25*s*.

IN these days when the term cancer research means to nearly everybody the hunt for the cause or cure of cancer it is surprising and rather refreshing to come upon a book devoted entirely to the study of the spread of tumours in the human body. It is true that in his preface Dr. Willis suggests that studies such as his may uncover some of the secrets of neoplastic growth, as indeed they may; but that was not his object in writing this book. He writes as a naturalist who happens to be particularly interested in that branch of the science of biology which we call pathology, and to him the study of a neoplasm is incomplete unless it embraces all parts of that neoplasm. Whereas to the average pathologist, as to the clinician, the dissemination of a tumour is of importance because it influences treatment and prognosis, to Dr. Willis it is of interest as a manifestation of the tumour's life-history, and a small metastasis tucked away in some dark corner of the body is just as important as the massive deposit which causes symptoms.

The basis of the book is Dr. Willis's wide personal experience of malignant disease. On to this he has grafted a very extensive and critical survey of the literature, about 2500 references are given in the bibliography, and the work as a whole gives a very complete account of what is known of the subject. It is divided into two parts. Part I. is devoted to a general discussion of dissemination by the lymphatics, by the blood stream, by implantation, and so forth. It contains particularly interesting chapters on rare and special types of metastases, latent primary tumours, the susceptibility of tissues to metastasis, the stroma of tumours, and the bearing of experimental work on the problems of metastasis. Part II. is devoted to a discussion of secondary neoplastic disease in individual organs and tissues. In an appendix is given a synopsis of 323 autopsies of cases of malignant disease, performed by the author or under his supervision. From the description of his technique, and the abbreviated notes of the cases, it is easy to see why he nearly always finds a higher proportion of secondary growth than is quoted in other published records. The moral is that it is difficult to see almost anything unless one really looks for it.

Dr. Willis has accomplished a sound bit of work, and has written a book which will be invaluable as a work of reference to all interested in the subject of malignant disease.

## Gynécologie opératoire

Second edition. By HENRI HARTMANN, Professeur honoraire de clinique chirurgicale à la Faculté de Médecine de Paris; Membre de l'Académie de Médecine. Paris: Masson et Cie. 1933. Pp. 585. Fr.110.

THIS book is a complete treatise on the treatment of gynæcological diseases. It begins with a chapter on clinical examination, which is followed by sections dealing with medicinal treatment, radiotherapy, hydrotherapy, and other forms of physiotherapy in gynæcology. After detailed descriptions of operations Prof. Hartmann discusses the indications for various forms of treatment in gynæcological disorders and compares the results attained. A final section deals with the surgery of the ureter and bladder. The operations are well described and illustrated, and the opinions expressed on the indications for and against surgery are sound. The conclusions and recommendations are usually in accord with current English practice, but this does not apply to the section on hysterectomy. Here considerable space is devoted to detailed descriptions of difficult operations with high mortalities such as perineal, paravaginal, and parasacral hysterectomy, which present no advantage over the ordinary abdominal and vaginal operations. The chief omission, from the English point of view, is that of Fothergill's operation for prolapse which surely deserves mention. The accounts of abdominal operations are for the most part satisfactory, though more detail about the technique of certain procedures would be welcome. This applies especially to operations such as resection of the hypogastric plexus, which have become popularised chiefly through the work of French surgeons.

## The Adrenal Cortex

*A Surgical and Pathological Study.* By L. R. BROSTER, O.B.E., D.M., M.Ch. Oxf., F.R.C.S. Eng., Surgeon to Charing Cross Hospital; and H. W. C. VINES, M.A., M.D. Camb., Pathologist, Charing Cross Hospital Institute of Pathology. London: H. K. Lewis and Co., Ltd. 1933. Pp. 94. 6*s*.

THIS short monograph gives a good account of the authors' personal clinical and pathological investigations into what has been termed the adrenogenital syndrome, where lesions of the adrenal cortex, in women, are associated with hirsutism and virilism. From the observations of many clinicians and pathologists, it is known that the pathological lesion in this syndrome may be a diffuse cortical hyperplasia, or neoplastic, either adenomatous or malignant. In the cases here described the lesion has usually been a diffuse cortical hyperplasia. It is important to note that, in some instances, manifest virilism was unaccompanied by hyperplasia of the gland, and the suggestion made is that here the internal secretion responsible for masculinisation is more active than normal, thus antagonising the ovarian function sufficiently to produce a change-over towards the male type. This opinion is based on Mr. Broster's results from unilateral adrenalectomy, an operation which was undertaken in a number of the present series of cases. It was found that no ill-effects were produced on the general health, a finding similar to that when extirpation of one adrenal is performed in animals. In certain of the authors' cases, removal of one gland resulted in beneficial effects upon the menstrual disturbances and hypertrichosis of this syndrome; in others, however, unilateral adrenalectomy appeared to make very little difference.

The most important finding in this investigation is the suggestive fact that some of the cortical adrenal cells, from the glands removed, have a special affinity for a Ponceau fuchsin differential stain, in this differing from normal glands. This positive fuchsinophil reaction was found in the glands of all cases subjected to unilateral adrenalectomy. The authors put forward the tentative suggestion that the substance so staining may possibly be closely related to the hormone, or its precursor, responsible for the

process of masculinisation. The reaction is positive not only in cortical cells when virilism is present, but also in adrenocarcinomata of the cortex when associated with virilism. Broster and Vines extended their investigation by studying this reaction in the adrenals of fœtuses of both sexes. Some very interesting deductions are drawn from their different findings in the two sexes. They point out, moreover, the clinical resemblance between the so-called Achard Thiers syndrome ("diabetes of bearded women") and the pituitary basophilism syndrome of Harvey Cushing. In the latter syndrome hyperplasia of the suprarenal cortex is often found. It is interesting that in one case of this type in their series the authors obtained a strongly positive Ponceau fuchsin reaction with the cortical cells.

It is admitted, of course, that much of the exposition in this monograph is hypothetical, but the field of purely histological observation is obviously limited. The ultimate proof or disproof of these views must rest with the biochemists. The authors have at any rate made an interesting contribution to the study of the adrenal cortex and its relation to the adrenogenital syndrome, and offer another line of approach to the extremely difficult problem of sex determination.

## Mayou's Diseases of the Eye

Fourth edition. Revised and largely rewritten by FREDERICK RIDLEY, B.Sc., M.B., F.R.C.S., Assistant Surgeon and late Pathologist, Central London Ophthalmic Hospital; Consulting Ophthalmic Surgeon, London County Council; and ARNOLD SORSBY, M.D., F.R.C.S., Hunterian Professor, Royal College of Surgeons; Assistant Surgeon and Pathologist, Royal Eye Hospital. London: Humphrey Milford, Oxford University Press. 1933. Pp. 249. 6*s*.

## Student's Guide to Fundus Appearances

Same authors and publishers. 1933. Pp. 16. 2*s*. 6*d*.

THE third edition of Mayou's Diseases of the Eye appeared as long ago as 1920. This is practically a new book published at about half its former price. It is specially adapted for students at an ophthalmic out-patient department, and though much that was valuable in the previous edition has been omitted, more has been retained and brought up to date. The result is a good elementary book on methods of examination, refraction, external and internal diseases of the eye and their relation to general diseases, and the more common operations. This last section may seem unnecessary in a book for students, but the short descriptions will be of great service to those who from the gallery of an operating theatre are trying to make out what the operating surgeon is doing and why. Not much in the work claims to be original, but here and there the individuality of an author peeps out. The new physiology of the tears, for example, we owe largely to Mr. Ridley, though his name is modestly suppressed in the excellent account given here. In the chapter on glaucoma the description of its pathology is rather too dogmatic; it would perhaps have been wise to mention that the modern views here set out are by no means universally accepted.

The work is illustrated by 38 figures essential to the text, but all coloured illustrations of the fundus oculi are published separately under the title of Student's Guide to Fundus Appearances. This little book is small enough to go into a jacket pocket. It does not profess to be an atlas of the diseases of the fundus, but portrays 12 typical fundi with detailed notes of the appearances, normal or abnormal, which it is important for the student to observe. The student who studies these carefully should not fail to observe any of the innumerable variations that he may encounter in the dark room of the ophthalmic department.

## Chronic Nasal Sinusitis and its Relation to General Medicine

Second edition. By PATRICK WATSON-WILLIAMS, Consulting Surgeon in Diseases of the Ear, Nose, and Throat, Bristol Royal Infirmary. Bristol: John Wright and Sons. 1933. Pp. 262. 15*s*.

THE new edition differs from the former, which we reviewed three years ago, in but a few particulars. Sir Humphry Rolleston has now supplied a foreword, in which he points out that the work enforces the conception of the causal relation of chronic focal infection to many general diseases, and should therefore be of interest alike to those engaged in the practice of general medicine and surgery and of the specialties. The slight increase in the size of the book is chiefly due to the addition of a short third part which contains notes on agranulocytosis, and on leontiasis ossea and other obscure affections of the bones, in which there is no proof of causation by micro-organisms, and also on mixed infection or "pathogenic symbiosis." The work will repay study.

### British Journal of Surgery

THIS is the second decennial index (Bristol: John Wright and Sons, Ltd. 1933. 10*s*. 6*d*.) to the *British Journal of Surgery* which has been issued, covering the volumes XI.–XX. and the period July, 1923 to April, 1933. As is pointed out in the preface, it shows the directions of progress of British surgery in the period after the war when surgeons were able again to turn their thoughts to civil work. Attention is drawn, in a brief preface by Sir D'Arcy Power, to the development of the surgery, especially of the nervous system, the alimentary canal, the liver, and the ductless glands. It is noted also that surgery is making for itself a special language; many of the terms employed are new, useful, and expressive, but their multiplication will soon need an explanatory dictionary. Book reviews are indexed twice, once under their titles and once under their authors; this section is not free from trifling misprints, notably on pp. 128 and 129.

### Index Veterinarius

THIS volume (Vol. I., No. 1, April, 1933; Weybridge: Imperial Bureau of Animal Health) is the first of a series which it is proposed to issue quarterly, and is comparable to the "Index Medicus" in matter and arrangement if not in production. The work is produced by a duplicator, and at the beginning of the foreword reference is made to the limitations thus imposed, for the duplicator is a less supple instrument than a printing press. More obvious mechanical drawbacks which are to be regretted in a volume that has evidently been put together with industry, patience, and skill, are its bulk—for only one side of each page is written on—its rather flabby covers, and the faintness of the typing on some of the pages. The full titles of papers are to be found only under the name of the author, or where there are several authors under the name of the first author, abbreviated titles being used in what seems to be a very complete system of cross-references. A list of the abbreviations and the full names of the journals indexed is supplied. Distinctly a work of reference for which there is a need; those responsible for its issue deserve gratitude. We regret that economical reasons (for this we assume to be the case) have led to an inconvenient format.

THE LANCET

*LONDON: SATURDAY, DECEMBER 16, 1933*

## PNEUMONIA AND ITS SPECIFIC TREATMENT

WITH a paper on pneumococcal fever—a more comprehensive name for lobar pneumonia—Dr. J. A. RYLE and Dr. R. L. WATERFIELD introduce a symposium appearing in the October issue of *Guy's Hospital Reports*. The subject is pneumococcal infection in various situations and at various periods of life, and it is one of increasing interest. What may be termed the newer knowledge of such infection began some 20 years ago when DOCHEZ and AVERY in America, and LISTER in South Africa, showed that the causal organism is of different serological types. The American workers called these I., II., and III., according to the frequency with which they were isolated from cases of lobar pneumonia, and research elsewhere has in general substantiated this view of their relative frequency as infective agents. The severity of the disease is found to vary with the type responsible; thus, in this country, taking crude mortality-rates, type I. pneumococcal pneumonia has a case death-rate about 10 per cent., type II. 20 per cent., and type III. 30–40 per cent.; while in America, though the mortality over all is much greater, there is the same relationship (R. CRUICKSHANK [1]). The differentiation of the types may thus become as important as the differentiation of paratyphoid from typhoid fever, or Flexner from Shiga dysentery. In future, we may designate pneumonia not according to its clinical features, but according to the ætiological agent—as type I., II., or III. pneumococcal, streptococcal, staphylococcal, or whatever it may be.

Recent improvements in the production and application of antipneumococcal serum have increased the practical significance of these and kindred observations. In the last three years the need for data from Great Britain has been to some extent supplied by clinical experiments in Glasgow, Edinburgh, Aberdeen, and London, and a review of the findings at these centres is shortly to be published. Meanwhile those requiring guidance in practice will find it in RYLE and WATERFIELD's conclusions. They say that they are disinclined to risk a serum reaction in any case where it may be expected, and in previously healthy adults showing a good initial response to infection and a high leucocytosis they would "feel justified in withholding" the remedy. "We are thus left," they say, "with adult cases giving cause for undue anxiety at an early stage and showing a failure of leucocytosis; alcoholics might be included in this group. To these it should be justifiable to give an early dose of Felton's serum, and to continue the treatment if the organism is found to be of appropriate type." This advice, looked at in the light of some of the published work (e.g., DUNCAN LEYS [2]), is, if anything, on the conservative side. It takes cognisance of the necessity for giving the serum early if it is to be given at all, and hence for a bacteriological service which will type the organism accurately with the least possible delay. It is also influenced by the possibility of distressing the patient. But if this form of treatment can be shown to save lives and shorten the duration of illness and convalescence such obstacles are not likely to stand in the way of its more general application. RYLE and WATERFIELD point out, only too truly, that its expense must be considered; but it is noteworthy that the average cost of the serum required for treating a patient with type I. pneumococcal pneumonia has lately decreased from £10–15 to £2–4, representing a bulk of concentrated and standardised serum of 12–24 c.cm. Again, the difficulties of bacteriological typing and the technique of intravenous serotherapy may be overcome by an organised campaign such as is being conducted by the Massachusetts department of public health. In 1930 the department embarked on a scheme to make serum treatment of pneumonia available in small and poorly equipped hospitals and in general practice, and the results of two years' work, representing 421 cases treated mainly by general practitioners, show a reduction of more than half in the case-fatality rate of type I. pneumonia (R. HEFFRON and G. W. ANDERSON [3]). Further advances may be expected in the substitution of subcutaneous or intramuscular for intravenous injection, in the serum treatment of such pneumococcal infections as meningitis and peritonitis, which in the primary form are mostly due to types I. and II., and even perhaps in the production of a pan-pneumococcal antiserum.

The opinion of clinicians and epidemiologists that broncho-pneumonia is a separate disease from lobar pneumonia has now obtained support from bacteriologists. Pneumococci isolated from the sputum or other sources in broncho-pneumonia belong almost entirely to the heterogeneous Group X, and when serologically subdivided are identical with the types of pneumococci found in the throats of healthy people. The natural inference is that these potentially pathogenic pneumococci produce autogenous infection when the resistance of the host is lowered. The problem of broncho-pneumonia is therefore likely to be solved only when a much higher standard of health among the poorer classes is attained and when methods of controlling such infections as measles and whooping-cough have been successfully applied. "Pneumococcal fever," on the other hand, has many features of a specific infectious disease, with a regularly recurring winter epidemic reaching maximum prevalence in the spring. It is possible and even probable that the disease will occur in this epidemic form only in industrial towns where climatic and social conditions foster its spread, and it has to be admitted that the exact

[1] THE LANCET, 1933, ., 563, 621.

[2] Ibid., Sept. 30th, 1933, p. 741.

[3] Jour. Amer. Med. Assoc., Oct. 21st, 1933, p. 1286.

mode of transmission is as yet unknown. However, a recent paper by W. G. SMILLIE,[4] of Boston, corroborates earlier American observations on the frequency of types I. and II. pneumococci (the epidemic types) in the throats of family contacts of pneumonia cases, and the Glasgow workers have demonstrated the existence of the convalescent as well as the contact carrier. These are doubtless links in the chain which is bringing lobar pneumonia into line with other fevers. The difficulty of preventing respiratory infections makes it all the more necessary to use available means of lessening the death-rate and incapacity resulting from them, and now that patients with pneumonia are often removed to isolation hospitals, local bodies have an opportunity, through their medical officers of health, of testing the value of antipneumococcal serum. The expense may be partly compensated by a shortening of the stay in hospital and of the period of recovery. It is not altogether irrelevant that about two-thirds of the cases of lobar pneumonia occur between the ages of 15 and 40, an age-period of great economic value to the State. Certainly an organism which, if the deaths from pneumonia and bronchitis are combined, kills almost twice as many people as the tubercle bacillus, deserves the closest possible attention.

## TUBERCULOUS MILK

THE public is being enlightened about the extent to which the milk-supply is infected with tubercle bacilli. On Oct. 31st the attention of the London County Council was drawn [5] to the fact that the old method of sending milk to the metropolis in churns was being replaced by the use of large glass-lined tanks, and that the consequent bulking of milk which this practice involved was leading to a pooling of infection not envisaged by the Milk and Dairies (Consolidation) Act, 1915. (A memorandum [6] by the Royal Sanitary Association of Scotland emphasises the same danger.) Information for Scotland is given in a report just issued by the Department of Health.[7] An investigation carried out, presumably during the last two or three years (though no dates appear to be mentioned), into the incidence of tuberculous infection of the milk-supply in Aberdeen, Dundee, Edinburgh, and Glasgow has brought to light some very interesting data. One of its chief objects was to ascertain the frequency of infection of different types of milk. A total of 1534 samples of milk in churns, representative of the produce of single farms, was examined, and 10 per cent. were found to contain living tubercle bacilli. Of 207 samples of milk transported in tanks, 37·5 per cent. were infected. This difference affords some indication of the effect of bulking. That the figure (37·5 per cent.) obtained for tank milk in Scotland is considerably lower than that (83 per cent.) given in the L.C.C. report, or than the 100 per cent. given by F. C. MINETT and E. J. PULLINGER for London tank milk, is presumably due to the fact that in Scotland the average volume of milk examined was about 500 gallons, whereas in London the quantity has been nearer 3000 gallons. An examination of 1243 samples of bulked milk pasteurised by the holding method showed that 2·8 per cent. of them still contained living tubercle bacilli, though there was evidence that the numbers surviving were as a rule comparatively small. With milk pasteurised by the unofficial flash method an even higher proportion of samples (8·2 per cent.) was infected. Tubercle bacilli were found in only one of 714 samples of Certified and Grade A (T.T.) milk—a pleasing indication of the value of tuberculin testing combined with periodical veterinary inspection. Finally, in order to ascertain the actual risk to the purchaser, 1494 samples of retailed milk were examined. These consisted of graded and ungraded, heated and non-heated milk, and since the samples were not collected in numbers corresponding to the total volumes of these different types, a weighted mean had to be calculated. The estimate arrived at was a figure a little above 5 per cent.

It is quite clear from these data that the consumer of ordinary raw milk is exposed to serious risk of tuberculous infection. The reality of this danger has been emphasised in a number of authoritative publications, and was recently chosen as his text by Dr. W. G. SAVAGE in delivering the Mitchell lecture [8] before the Royal College of Physicians of London. The facts relating to the incidence of human tuberculosis of bovine origin are beyond dispute; the main question to be considered is what action can profitably be taken to diminish the dangers of infected raw milk. It is clearly impossible to deal with the situation by means of the Tuberculosis Order, 1925. When a 3000-gallon tank may contain milk from 150 separate farms, nothing short of individual sampling of each supply can enable the sources of infection to be discovered, and nothing short of a further examination of the individual cows in the infected herds will reveal the actual animals at fault. The daily, or even weekly, examination of each tank of milk coming into the London area, with the further series of examinations necessitated by the almost uniform discovery of infection, would be economically impossible. The method of the Tuberculosis Order, 1925, is in fact an approach from the wrong end. What Dr. SAVAGE, and practically all medical and veterinary workers who have studied the subject, are agreed upon is that tuberculosis must be eliminated from our bovine population by building up tuberculosis-free herds. Mr. LESLIE JORDAN'S report,[9] on which we have recently commented, shows how this policy may be successfully initiated, and Dr. SAVAGE'S suggestion that in the furtherance of this scheme special herds should be established for the reception of tuberculin-positive but otherwise healthy cows is worth consideration. In the meantime the only safeguard consists in a

[4] Ibid., p. 1281.
[5] THE LANCET, Nov. 4th, p. 1068.
[6] From the Secretary of the Association, 185, St. Vincent-street, Glasgow, C.2.
[7] Med. Research Counc., Spec. Rep. Ser. No. 189. H.M. Stat. Office. Pp. 38. 9d.
[8] Brit. Med. Jour., Nov. 18th, p. 905.
[9] THE LANCET, Nov. 4th, p. 1043.

widespread system of pasteurisation, jealously controlled so as to ensure complete destruction of all pathogenic organisms.

## DRINK

AMERICA is now celebrating the second demise of prohibition, counting as a chapter in the story the early movement in the New England States. Misplaced idealism was the licensed midwife that brought the unhappy child into the brave new world; practical common sense declared that it should no longer live. It is too much, however, to expect that its death will bring peace, for the licensing problem will be always present and in America, as here, it remains unsolved. We hope that whatever rules and regulations are made by individual States will be of such a nature that they can be enforced, and that if they cannot be enforced they will not be made; apprehensions here are perhaps needless after the terrible example that has been supplied of the immunity enjoyed by law-breakers. Few responsible people in this country would deny that some control of the drink trade is necessary. We have evolved for ourselves a complicated system, difficult to defend perhaps on logical grounds, but one which works, if to work is to muddle through. There are, however, problems constantly arising which call for a clear expression of opinion. One of these—the advertising of intoxicating drinks—has come into prominence through a recent statement of the director of the Brewers' Society. The insolent claim made by Sir EDGAR SANDERS, that the continuance of advertising would be contingent on editorial support, was denounced both by responsible representatives of the press and by the Archbishop of Canterbury in last month's meeting of the Church Assembly. But what of the campaign for increased advertisements of intoxicating drinks? Are brewers and distillers in the same class as the manufacturers of motors and wireless sets? Can the country allow to pass unchallenged Sir EDGAR SANDERS's statement that "we want to get the beer-drinking habit instilled into thousands, almost millions of young men who do not at present know the taste of beer." "There are," he says, "plenty of footballers, plenty of cricketers, plenty of prizefighters, and so on who would like to appear in the press saying that their strength is derived from beer—at any rate, we should consider this in connexion with our scheme." The country should consider it too. The trade is licensed, partly for purposes of revenue, and partly because it deals with something which is a source of potential danger to certain individuals and so to the community. Why does Sir EDGAR SANDERS stop short with the prizefighter? What about the billiard player, the chauffeur, the telegraph operator, the aviator? Is their "strength" too derived from beer? And why should the young women of the country be deprived of the knowledge of the secret of strength and the licensed trade of still larger profits? Perhaps these untilled fields will come under cultivation when the £250,000 allotted for the present advertising campaign have been exhausted.

That alcohol is of value to the citizen was recently the subject of an unsatisfactory debate at the Hunterian Society, unsatisfactory not because of the absence of any conclusion but because no attempt was made to define what was meant by alcohol, value, or citizen. It appears to us an undoubted fact that alcohol in certain percentages makes social intercourse easier for certain people, adds to the amenities of life, and creates a feeling of well-being without detracting from their general health. It is equally obvious that for other citizens even a smaller percentage of alcohol may cause them to be not only a general nuisance but a danger to society. While the action of alcohol on the individual, and his reactions to it, are not predictable, there is a real disadvantage to the community in all advertising campaigns whose aim is to increase the general consumption of alcohol. We believe that the moderate drinker has no desire to convert the teetotaller, provided the teetotaller allows him a measure of liberty; and it seems to us that the brewers by their campaign of publicity are only bringing the day nearer when by the adoption of Government control along the lines of the Carlisle experiment the incentive of private profit will be abolished.

### AIR AMBULANCES

AT the United Services section of the Royal Society of Medicine on Monday last, Colonel E. M. Cowell, F.R.C.S., told what had been done to facilitate air transport of injured and sick persons. Air ambulance detachments under the British Red Cross having been sanctioned by the Air Ministry, several flying clubs had taken the matter up; these would, he thought, not be without their use in war, manned by women and pilots too old for fighting. He showed slides of several types of ambulance plane which had been officially approved. The French had evacuated more than 4000 casualties in Morocco by air, and civil aviation was carrying sick and wounded persons in the U.S.A., Sweden, and Australia. Subsequent speakers noted that casualties were evacuated by air in Somaliland in 1919, and that even earlier than that aeroplanes were used to bring victims of air crashes from outlying aerodromes to the R.A.F. Hospital at Halton. In ten years 1400 casualties had been carried by air in the East. The general service machine and stretcher should, it was said, be used whenever possible. In the new mechanised army, on the field, it may be difficult to collect casualties except by air, for battles will take divisions over 100 miles in a day. Air evacuation would have been useful in the South African war, where the motor ambulance might have been defeated by the drifts: also in mountain warfare, when small machines are able to land in small areas, possibly with the help of the autogiro. In the desert an aeroplane can do in two or three hours what would take a convoy of camels a week. Colonel Cowell received the thanks of the section for his own work in organising civil air ambulances.

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BRITISH COTTAGE HOSPITAL, ALGIERS.—There is a danger of this hospital having to close its doors, its resources having been seriously affected by the economic depression and the fall in the number of winter visitors to Algiers. The hospital, which has been in existence for nearly 40 years, and has of late been much improved, gives good service to the local British and American communities and to sailors. An appeal for support is being made.

# ANNOTATIONS

## BART.'S AT CHARTERHOUSE

THE Prince of Wales, in his dual capacity of president of the hospital and perpetual student of the college, paid a visit last Friday afternoon to Charterhouse-square, where the Medical College of St. Bartholomew's Hospital is now taking shape. The Prince was received at the entrance gate by the Lord Mayor of London and the Vice-Chancellor of London University, accompanied by office bearers of the hospital and college, and afterwards took tea with more than 200 old Bart.'s men in the great hall of Charterhouse, where he was received by the senior physician and the senior surgeon of the hospital, and by the warden of the college. Although medicine and surgery have been taught within the walls of the hospital for 400 years or so, it was not until 1830 that the college was founded by Abernethy and his colleagues as a corporate body, and not until 1921 that it acquired its own charter. Last year more than 900 part- and whole-time students attended courses conducted by 120 teachers, not including a large staff of technicians and others. Squads of students of various years were stationed in the quadrangle to welcome the Prince. The buildings, however, will require remodelling before the departments of physics, chemistry, anatomy, and physiology can move into them; the students are already gainers by possession of a gymnasium and of abundant space for outdoor recreation. Of the £81,000 required to pay off the deficit on the purchase money and to make the necessary alterations in the buildings, £26,000 has already been subscribed by past and present Bart.'s men. It is understood that the Prince suggested to the Lord Mayor that the City might now make an appeal for the remainder of the money.

## MEDIAN NERVE INJURY IN FRACTURES OF THE WRIST

THE observations of Abbott and Saunders [1] suggest that the involvement of the median nerve in fractures of the lower end of the radius may be a much more important complication than is generally supposed. The nerve is very rarely injured directly at the time of the accident; indeed they have been able to find only two records of this happening. The important lesion is a secondary neuritis resulting from pressure on the nerve by surrounding structures. Such pressure can be caused by an unreduced, or incompletely reduced, bony fragment, or by callus. Evidence of involvement of the nerve can usually be detected in these cases during the course of treatment, although in one case to which Abbott and Saunders refer the symptoms of median nerve neuritis first appeared ten years after the imperfect reduction of a Colles's fracture. The type of median nerve injury to which these writers wish to draw particular attention is, however, a direct result of treatment. The position of acute palmar flexion has become popular of late years in the splinting of cases of Colles's fracture and of backward displacement of the lower radial epiphysis. It is said to be especially effective in retaining the reduced position. It now becomes apparent that the position of acute flexion exposes the median nerve to a dangerous degree of pressure, which, if persisted in for several weeks, may lead to severe crippling of the fingers. Six such cases are reported, in one of which the median nerve was so severely damaged within a week that a subsequent neurolysis became necessary. The danger signals in these cases were severe pain in the hand and fingers and numbness of the thumb and index-fingers, occasionally also of the middle finger. Examination of the hand revealed anæsthesia, or hyperæsthesia, of the area of median nerve distribution. According to Abbott and Saunders, the damage is caused by nipping of the nerve between the upper edge of the transverse carpal ligament and the lower end of the radius. In the position of acute flexion the transverse carpal ligament is rendered quite tense—an observation readily verified in the dissecting-room. This tension is another factor in pinching the nerve against the radius, and in cases of incomplete reduction the danger is obvious. It is an indefensible practice to employ the position of acute flexion to overcome the deformity of an imperfectly reduced fracture of the lower end of the radius by gradual angulation. The time when one is most tempted to employ it is after the operation of osteotomy for correction of gross deformity resulting from an old Colles's fracture, because, owing to the absence of impaction, there is a strong tendency to the recurrence of the deformity. It is just in these cases, however, that the danger of median nerve neuritis is particularly to be feared. There is possibly a degree of backward slipping of the lower fragment, undetected at the time, during the application of the splint. Extreme caution is enjoined by Abbott and Saunders in the use of acute flexion in all cases, but especially after osteotomy of the lower end of the radius. They also advise examination for median nerve involvement before reduction is attempted. Many of the cases of stiffness of the fingers and of trophic disturbances of the joints of the wrist and fingers after Colles's fracture could, they believe, be traced to injury to the sympathetic fibres carried in the median nerve.

[1] Abbott Le Roy, C., and Saunders, J. B. de C. M.: Surg., Gyn., and Obst., October, 1933, p. 507.

## PAROXYSMAL HYPERTENSION

PAROXYSMAL attacks of vasomotor spasm, with great rise of blood pressure, are characteristic of the rare adrenal tumour known as a paraganglionoma, of which an example is described by J. M. Planteydt.[1] Tumours of the suprarenal medulla are divisible into neuroblastoma (malignant), ganglioneuroma, and paraganglionoma. It is the third type of tumour, composed of chromaffin cells and presumably associated with hyperadrenalinæmia, which causes the clinical picture in question. In Planteydt's case the patient, a fisherman aged 28, had suffered for 18 months from attacks of tightness in the chest and palpitation, increasing in severity until he was obliged to give up his work. Physical examination revealed nothing abnormal except an accentuated aortic second sound. Radiography of the heart showed an enlarged left ventricle; of the kidneys, that the right upper pole could not be defined; but apart from this there was no abnormality. While under observation the patient had a number of "hypertensive crises" in which he felt very ill, complaining of substernal oppression and occasionally of pain in the chest. The face became very pale and cyanotic, the extremities cold, the pulse small and rapid, while the blood pressure was found to be extremely high. In one such attack the pressure was 310/150; about an hour later profuse sweating began, and the pressure gradually fell to 134/110.

[1] Nederl. tijdsch. v. geneesk., 1933, lxxvii., 4774.

The attacks usually lasted from a few minutes to half an hour. Despite medical and X ray treatment, they became more severe, and as there were signs of impaired renal function, it was decided to operate. In view of the X ray findings the right kidney was explored through an anterior incision, the peritoneum being pushed aside, and an encapsulated tumour, the size of a fist, was removed from the upper pole. Histologically it was composed of large cells set directly on the capillary endothelium, many containing chromaffin matter. After operation the blood pressure fell to a very low level, and adrenaline was given for two days, after which the manometer reading was 125/95, at which it remained constant. Six months later the patient was back at work, feeling quite well, the urine was normal and the blood pressure 115/80. Planteydt states that only three other cases of successful removal of an adrenal paraganglionoma have been published. He urges operation in any case in which the renal function shows signs of impairment despite medical and X ray treatment, since the patient will otherwise, sooner or later, fall a victim to renal failure.

## BENZEDRINE IN RHINOLOGY

A NEW drug has recently been introduced into rhinology under the name of benzedrine. It is a synthetically prepared compound, the carbonate of benzyl-methyl-carbinamine, which is described as a racemic mixture of bases having the formula $C_6H_5CH_2{\cdot}CH{\cdot}NH_2{\cdot}CH_3$. Both the base and its carbonate are volatile, and may be administered as an inhalation or by means of a dropper or spray of a 1 per cent. solution in liquid petrolatum. It is structurally related to ephedrine and to adrenaline, and has somewhat similar pharmacological properties, producing a marked rise of blood pressure and a shrinkage of the nasal mucosa. Testing it in the out-patient department of the Boston City Hospital, Dr. Harry V. Byrne[1] found that it gave definite relief in 18 out of 26 cases of seasonal hay-fever and, to a less pronounced degree, relieved the discomfort of acute coryza, but was of no benefit in chronic hypertrophic rhinitis and chronic sinusitis. He administered it by inhalation, but does not state what form of inhalation was employed. The results obtained in the treatment of hay-fever and acute rhinitis were regarded as encouraging, but Dr. Byrne notes that overdosage has been followed by symptoms resembling the effects of cocaine. The usual duration of the action appears to be about four to five hours, and there is no mention of deleterious subsequent reactions. The drug appears to be worthy of further trial.

## THE MEDICAL DIRECTORY

THE Directory for 1934 contains 527 more names than appeared in the previous volume; that is a larger increment than any since the year 1929. There is also an interesting difference in the incidence of the increase among the seven sections into which the Directory is divided. In all of these, with the sole exception of Ireland, there has been an increase of names this year—small, it is true, in the case of Wales, Scotland, Abroad, and Services, but significant, as it is a reversal of the recent tendency to fall. In the Provinces there is as usual a large increase, this year by 362 names, but the London list has only 73 names extra to its credit. The Directory itself is nearly 30 pages longer, but happily the volume has not increased in size; it is, in fact, a little more compact, evidently by reason of the omission of the section on British Spas and Seaside Resorts, whose place is now taken by the official handbook of the British Health Resorts Association. We cannot help, however, giving expression to a regret that the publishers have not acceded to the request, recently voiced by Dr. John Fawcett in our own columns, to insert again in the Directory the list of dental surgeons, discontinued in 1925, which is available nowhere else. As Dr. Fawcett pointed out, neither the Medical Register nor the Dentists Register fulfils the requirements, and the lack of a combined medical and dental directory may be a hindrance and an inconvenience to doctors in their work. Of this we have since received independent testimony. In all sections of the Directory there are the usual corrections and emendations which make the volume indispensable as a work of reference to many groups of persons within the medical profession or closely connected with it. The list of special hospitals in the London section continues to gain in detail, but some will miss the names of assistant medical officers from the general hospitals division of the London County Council. The Directory is published by Messrs. J. and A. Churchill, and the price remains unchanged at 36*s*.

## PSYCHO-ANALYTICAL THERAPY

PSYCHO-ANALYTICAL conceptions have had considerable influence on human thought and offer what some believe to be the only intelligent approach to many psychiatric problems. Clinicians, whilst admitting the influence of psycho-analysis, are nevertheless obliged to weigh therapeutic possibilities and will appreciate the mode of approach taken by Dr. Leo Kessel and Dr. H. T. Hyman in a study entitled The Value of Psycho-analysis as a Therapeutic Procedure.[1] Thirty-three patients of these two physicians had been subjected to a more or less complete course at the hands of competent medical analysts, and the results are set out with impartiality. Sixteen cases gave results described as bad. Of these, seven, including one suicide, were manic-depressives or schizophrenics—the writers note that such cases are readily referred to the analyst, who shows an increasing disposition to refuse them for treatment; six were definite failures, and one was made much worse, probably because of a clumsy analysis; three were counted as failures since they sought analysis for marital difficulties ultimately solved by divorce. The 17 good results comprised four patients who were "relieved of symptoms by analysis plus sexual liberation" and we may agree that it is impossible to classify them as therapeutic triumphs of a specific method; in five patients the results were "specific and gratifying beyond measure," and the writers believe that they could have been obtained in no other way than by analysis; five were helped but not wholly relieved; three adolescents with behaviour problems were relieved by analysts without a formal psycho-analysis, and it is suggested that any simple advice would have been equally successful. The patients in whom good results were obtained were those with anxiety and compulsive states, and visceral symptoms of a functional nature. Many of these types can be handled by less arduous and expensive therapy, but the writers make the point that they did not refer such patients to the analyst until driven to that procedure; hence, they say, a good result is a specific triumph for the analytic method.

Now that the pioneer stage of psycho-analysis

[1] New Eng. Jour. Med., Nov. 23rd., 1933, p. 1048.

[1] Jour. Amer. Med. Assoc., Nov. 18th, p. 1612.

is over, such a study of therapeutic possibilities is timely. The need to spend up to five hours a week, for a period that may run to a year or more, makes analysis a procedure not lightly to be undertaken; for what is only moderate remuneration for the analyst may be a heavy financial burden for the patient, though against that may be set the possibility of treatment without interference with the patient's daily routine. The practical conclusions seem to be that not much can be hoped for in the treatment of the major psychoses—though psycho-analysts may feel justified in persevering with early or mild cases under suitable circumstances, for they must be credited with as much courage as (say) our pioneer surgeons. In the field of the minor psychoses and where psychological disturbances show themselves in somatic disorders—and it is these that make up so many of the problems of general practice—we can look forward to the continued spread of psychological knowledge that will enable the practitioner to deal with some of them; others may benefit from more specific treatment according to the bent of the psychotherapist; and for a residue the combination of need and opportunity will justify recourse to a complete analysis in the hope of restoration to health, happiness, and efficiency.

## THE HOLMGREN WOOL TEST

THE test for colour-blindness by matching skeins of coloured worsted, devised by the Swedish physiologist, A. F. Holmgren (1831–1897), was until recent years the only one known to the medical student. It is now so entirely discredited that the latest text-book for students [1] dismisses it in a single line as "of historical interest only." The history of the abandonment of this test is not only curious but distressing, since its chief opponent, Dr. F. W. Edridge-Green, had to struggle for some 15 years before getting a proper hearing for his views in scientific circles, and for another ten years or so before seeing them so far prevail as to eliminate accidents due to defective colour vision whether on land or sea—so far, that is, as this can be effected by Governmental regulation. The story is related in a little book [2] published by Dr. Edridge-Green himself, in which he attributes the long delay in the recognition of his work to the Royal Society and especially to what he calls "the Cambridge element" in its decisions. His tone will certainly be blamed by his former opponents and others as egotistical—the author admits himself in the preface that the book cannot do him any good—but it is not easy to foresee how his accusations can be refuted. The history of the matter is shortly this.

In 1889 Dr. Edridge-Green took his M.D. degree at Durham, and was awarded the gold medal for a thesis on colour-blindness. Shortly after, a paper of his was communicated to the Royal Society by Sir Lauder Brunton, and he was appointed a member of the International Code of Signals Committee. Meantime the subject was taken up by the Board of Trade, who suggested his name to the Royal Society for inclusion in a committee on colour-blindness to which the whole subject was to be referred. That body did not follow the suggestion and issued a report unanimously recommending the Holmgren test for adoption by railway companies, shipowners, and the Board itself. The view of Dr. Edridge-Green, who had just then published a book on the subject,[3] was ignored. The permanent appointment as adviser to the Board of Trade, which had been promised to Dr. Edridge-Green if he could make good his views on the unfitness of the wool test, was given to one of his opponents. He however persisted in the struggle and in 1903, on the initiative of the late Mr. Devereux Marshall, a committee of the Ophthalmological Society was appointed to investigate the matter afresh. This committee issued a preliminary report [4] in which Dr. Edridge-Green's contention that some cases of colour-blindness cannot be detected by Holmgren's test, however skilfully used, was fully confirmed.

On the strength of this report Dr. Edridge-Green went to Cambridge, as a research student at his own expense, to obtain further evidence as to the facts. His reception there was chilly, and his thesis was rejected with the remark that he had done nothing original in colour-blindness. On the other hand, many authorities at Oxford, including the late Mr. Doyne and the late Prof. Gotch, took some trouble to confirm his facts. After 1910 opinion on the subject changed rapidly. In 1911 Dr. Edridge-Green was appointed Hunterian professor of the Royal College of Surgeons, and a committee of the British Association, appointed in 1912, reported in his favour. Questions in Parliament were put and finally, in 1915, the wool test was completely abandoned by the Board of Trade, and a lantern based on Dr. Edridge-Green's principles was adopted. Five years later he was given the official appointment, as special examiner and adviser to the Board, which the opposition of the Royal Society had debarred him from obtaining 20 years before. All this—and much more—may be read in Dr. Edridge-Green's manifesto, in which is also included a restatement of his theories about the function of the retinal rods and of the visual purple, which are essentially at variance with those now generally held. Whether or not these views find more support with physiologists in the future does not affect Dr. Edridge-Green's claim that after many years' struggle he succeeded in replacing an inefficient by an efficient test for colour-blindness. A director-general of the Naval Medical Service wrote in 1920: "Dr. Edridge-Green has deserved well of his country. He has given us the means of averting appalling disasters by eliminating the colour-blind from control of vessels and fleets at sea."

## PLEOMORPHIC BACTERIA

THE traditional and conventional view that has prevailed during this century has been that bacteria are organisms of a standard and fairly uniform morphology which multiply by simple fission and have no complicated life-histories. Descriptions of any considerable degree of pleomorphism have always been regarded with suspicion and have been generally attributed—in many instances correctly—to bad technique and impure cultures. A similar scepticism has met the arguments of those who have described developmental and reproductive cycles, though the cumulative evidence has strengthened that some apparently simple bacteria may go through manœuvres resembling some kind of sexual reproduction. In the current number of the *Journal of Pathology and Bacteriology* Prof. J. C. G. Ledingham describes some impressive observations on the morphology of the organism of pleuro-pneumonia. This organism is mostly regarded as on the verge of being a virus, on the grounds that infective material would pass

[1] Mayou's Diseases of the Eye. Ridley and Sorsby, fourth edition, 1933, p. 12.
[2] Science and Pseudo-Science: the Necessity for an Appeal Board for Science. London: John Bale Sons and Danielsson. 1933. Pp. 104. Price 2*s*. 6*d*.
[3] Colour Blindness. International Scientific Series.
[4] Trans. Ophth. Soc., 1904, xxiv., 367.

through porcelain filters; though it was well known that some phases of it were plainly visible, both individually under the microscope and en masse in cultures. According to Prof. Ledingham's description and some excellent figures, the microbe in its simplest form consists of a minute filtrable chromatic corpuscle from which mycelial-like filaments emerge. The protoplasm of these threads has the power to develop further chromatic nodes from which again moniliform growth proceeds, and in this way complicated structures may arise which have a remarkable resemblance to minute actinomycotic colonies. At some stages a thick sheath surrounds some of these elements, and the whole picture presents an extraordinary diversity of appearances. The systematic rank given to the organism must obviously correspond to its morphology and development, and Prof. Ledingham places it accordingly in the order actinomycetales, leaving its precise position therein to be determined later.

## HARVEY'S CHURCH

THE tower of Hempstead Church, where Harvey's bones lie, fell down 50 years ago, when the shell containing the great discoverer's remains was moved into a sarcophagus, which was placed in a chapel named the Harvey chapel. A fund was then opened for the restoration of the church, but failed to secure adequate support. In 1923 the Royal College of Physicians of London formed a committee with the object of raising the £5000 necessary for rebuilding the tower, and this year, with some £3000 in hand as a result, the work of rebuilding was started, Lord Dawson of Penn laying the foundation-stone last July. The money received has been expended, and a further £2000 is needed before completion can take place. An appeal has been issued now by Mr. A. W. Ruggles-Brise, D.L., Spains Hall, Finchingfield, Braintree, for subscription to a Hempstead Church Tower Fund, and donations can be sent to him, as hon. treasurer of the Fund, at that address.

## FUNCTIONAL UTERINE HÆMORRHAGE

THE pathology of profuse uterine bleeding occurring in the absence of any obvious reason has been the subject of investigation by Dr. A. Lloyd Potter, who described the conclusions he has reached at a meeting of the North of England Obstetrical and Gynæcological Society held at Sheffield on Nov. 24th. He had first repeated the work of Mr. Wilfred Shaw, who had found that the elastic tissue content of the uterus increased after each pregnancy and varied directly with the parity of the patient. The material examined by him provided ample confirmation of this work, and he thought that it could be taken as established that the elastic tissue content of the uterus bore a direct relationship to the parity thereof, and that it was in no way a sign of subinvolution, nor associated with the causation of functional bleeding. He had proceeded to the examination of 165 cases and had found it possible to classify them for the most part into two groups—namely, metropathia hæmorrhagica (34 per cent.), and epimenorrhœa (48 per cent.). In the former group the enlargement of the uterus was due to true hypertrophy of the muscle-fibres and not to an increase in the amount of elastic tissue. The endometrium was thickened and polypoid-formation was common, the microscopic appearance being similar to that of the premenstrual phase. Almost all the available ovaries showed follicular cysts and a singular absence of active luteal tissue. In the epimenorrhœal type the most striking feature found was œdema of the stroma and an increase in the number of thin-walled capillaries in the endometrium. In the ovaries available for examination the general picture pointed to hyperactivity of the follicular mechanism, an increase in the amount of active luteal tissue. In a few cases classified as of the hypomenorrhœal type, the patients complained of excessive loss at infrequent intervals; this group showed no characteristic pathological findings. Another small group included cases of postmenopausal bleeding of functional origin. The hæmorrhage in these cases was attributed by Dr. Lloyd Potter to the continuance of the pituitary action for some little time after the menopause. There remained 8 per cent. of the total number of cases which he was quite unable to classify. In these cases some ovarian or pituitary dysfunction may have been responsible for the altered menstrual cycle.

## ENDOTHECAL INJECTIONS

THE exact destination of anæsthetic fluids injected into the spinal canal is a constant source of controversy among anæsthetists. At the anæsthetics section of the Royal Society of Medicine on Dec. 1st Mr. Etherington Wilson made an interesting contribution to the argument, if we cannot admit that he has incontrovertibly solved the problem. His paper dealt solely with percaine and to establish his theories he related, and illustrated by slides, excellent experiments with coloured solutions in glass tubes. These showed the rate of ascent of the injected fluid in various circumstances and how method of injection, temperature, and specific gravity affect this rate. Nevertheless there appeared to be lacking sufficient clinical evidence to prove that the theoretically determined behaviour of the injected solution was actually that which took place in practice on the human subject. Those who discussed the paper appeared to hold the opinion that the reader of it had not convinced them that his technique was more certain in its results than are the methods of spinal injection usually adopted. It remains in fact true that the physics of endothecal injection are still sub judice in spite of the logic and emphasis of Dr. Howard Jones and the experiments of Mr. Wilson.

## "NOSE-CLOSING" RAYS

Sir Leonard Hill divides the sources of radiant heat into two categories, dark and bright—e.g., dull electric or gas fires on the one hand, and incandescent lamps, modern gas fires or coal fires on the other. He avers that dull sources, directed upon the skin, tend to cause occlusion of the nostrils, and that this produces discomfort in people who already have some partial obstruction, such as a deflected septum; bright sources not only do not produce this effect, but relieve the discomfort from the others. To test this theory A. F. Dufton and T. Bedford have performed carefully controlled experiments which they describe in the November issue of the *Journal of Hygiene* (p. 476). Acting on the assumption that congestion of the nasal mucosa should render inspiration more forcible, they have taken records of inspiratory pressures from one nostril under varying conditions. The principal subjects of the experiment were 30 blind men from St. Dunstan's, and 45 other people fitted with opaque goggles. The temperature and humidity of the room were kept constant, and other factors, such as daylight and movement of air, excluded or controlled. The subjects were exposed to one or other of two electric fires, respectively bright and dull, each of which had precisely the same heating power. These fires could be silently

interchanged at the will of the experimenter and without the knowledge of the subject. The results of the experiments are stated to have been invariable—namely, that there was no change in the inspiratory pressure when one fire was substituted for the other. This was confirmed by statistical analysis of the pressures recorded. A comparison of inspiratory pressures before and during exposure to various sources of radiant heat led to the conclusion that dull and bright sources acted equally as "nose-closers"; even sunlight had this effect. Moreover, it is stated that a sudden warming of the air of the room (by other than radiant heat) produced nose-closing in a partially stripped subject, as did the application of a fomentation to the arm. Immediate relief was obtained in all cases by the screening or removal of the source of heat. Temporary relief was afforded by sponging any part of the body, whether exposed to the heat or not, with cold water. No relief was given by any source of incandescent heat or light, nor by placing a trough of water in front of a dull source.

Dufton and Bedford thus differ from Sir Leonard Hill, not only on the effects of various forms of infra-red radiation, but also on the measures necessary to neutralise them. It is quite possible, as Hill points out, that infra-red rays of different wave-lengths may have different physiological actions, but the purely objective experiments of Dufton and Bedford seem to show that the nasal mucosa is not a satisfactory index of these, if they exist at all. There can be no doubt about the importance of excluding the possibility of suggestion in investigating any reflexes involving the nose; to a person suffering from hay-fever the mere mention of his complaint is often enough to start the eyes and nose streaming, during an otherwise quiescent interval. The reflex curtailment of the nasal blood-supply on chilling any part of the skin is already well known, and has been invoked to explain many common infections. The observations just recorded seem to show that the converse is also true; the authors are careful to point out that such nasal congestion as is produced is unlikely to be attended with discomfort on the part of a normal person, especially if the rise of temperature is slow.

## THE WARNING SIGNS OF ECLAMPSIA

ONE of the advantages of the antenatal clinic is that it provides excellent opportunities for studying the clinical manifestations of the pre-eclamptic toxæmia of pregnancy in its earliest stages. The three cardinal signs of this particular "toxæmia," when fully developed, are œdema, albuminuria, and hypertension. Apart from the generally recognised fact that œdema not infrequently precedes albuminuria, little is known about the order of appearance of the three signs or about their relationship to one another. A paper by Prof. F. J. Browne [1] provides useful information on these matters. In order to detect the earliest signs of abnormality Prof. Browne has been compelled to adopt strict criteria. He has accepted, for instance, a rise in blood pressure of a few millimetres above the normal limit of 130/70 as evidence of hypertension. This explains the high incidence of pre-eclamptic toxæmia in his clinic at University College Hospital—320 cases in a series of 1674 pregnancies. His results tend to show that in different cases the three signs may appear and disappear independently of one another, and only occasionally bear close comparison. None of the signs can therefore be regarded as a consequence of either of the others and, whatever the cause of the condition may be, it is evidently capable of eliciting each sign separately. In some patients œdema appears first, in others albuminuria, and in a considerable number hypertension. What then is the best single criterion of early toxæmia? Clearly not œdema, for much water must be retained before pitting can be demonstrated. Albuminuria is equally deceptive, for it may be the last sign to appear. Browne concludes that the routine estimation of blood pressure is, on the whole, the most sensitive test. It is refreshing to read that he resists the temptation to conclude that the fall in hypertension which occurred in many cases was due to advice received at the clinic. Many and diverse remedies are employed in treating pre-eclamptic toxæmia—for instance, alkalis, calcium preparations, low proteins diets, salt-poor diets, fluids in excess, and fluid restriction. Some of them are used empirically; the use of others is based on hypotheses. The advocates of all are apt to forget that rest in bed will often work wonders.

[1] Jour. Obst. and Gyn. Brit. Emp., December, 1933, p. 1160.

## PRESYSTOLIC MURMUR AFTER CORONARY OCCLUSION

THE occurrence of a transient diastolic murmur in two patients recovering from coronary occlusion is reported by Wolferth, Wood, and Margolies.[1] These murmurs became audible at the tricuspid area—that is, to the right of the lower part of the sternum—about a fortnight after the onset of the attack, and were situated in the presystolic portion of the cardiac cycle. In one case the time relations of the murmur were so altered with the occurrence of partial heart-block and paroxysms of auricular fibrillation, as to make it certain that the murmur was related to auricular systole. In quality it was unusual, being high pitched and blowing, and thus contrasting with the murmurs of mitral and tricuspid stenosis. Electrocardiograms in both cases suggested that the infarct involved the anterior wall of the left ventricle. The mechanism of production of the murmur is not clear, and the authors of the paper can only suggest possibilities, such as œdema of the tissues near the tricuspid valve, thinning and bulging of the septum into the right ventricle, and a thrombus placed so as to interfere with the opening of the tricuspid valve. As both the patients recovered, no pathological evidence was obtained. However, Wolferth and his colleagues report having seen bulging and thinning of the anterior part of the intraventricular septum in many specimens with infarction of the anterior wall of the left ventricle, but never thrombi under the tricuspid leaflets with infarction in this area.

[1] Wolferth, C. C., Wood, F. C., and Margolies, A.: Amer. Jour. Med. Sci., October, 1933, p. 496.

## THE PREVENTIVE ASPECTS OF MEDICINE

WE have been compelled to hold over until next week the next lecture in this series. The series will be continued until the holiday break occurs, after which publication will be resumed.

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WE regret to announce the death on Monday last of Sir William Whitla, doyen of the medical profession in Ulster and a world-wide authority on materia medica. Sir William, who was in his 83rd year, was hon. physician to the King in Ireland and pro-vice-chancellor of Queen's University, Belfast, which he represented in the British Parliament from 1918 to 1923.

# SPECIAL ARTICLES

## GENERAL MEDICAL COUNCIL

WINTER SESSION, NOV. 28TH–DEC. 2ND, 1933

(*Concluded from p. 1338*)

### Instruction in Tuberculosis

SINCE the last session the Education Committee have asked all licensing bodies whether they are satisfied that their candidates for the final examinations have received sufficient opportunity to study tuberculosis in its early stages and adequate instruction in its differential diagnosis. Prof. J. B. LEATHES reported that the replies indicate in every case that the licensing body was fully satisfied upon both these points.

Dr. L. P. GAMGEE protested that in Birmingham there were not sufficient opportunities for studying tuberculosis in the early stages. Sir GEORGE NEWMAN agreed, saying that he also had been surprised that every licensing body which had replied was fully satisfied. The Ministry, he said, had been receiving for some months complaints from tuberculosis officers in various parts of the country of the unsatisfactory reports of cases which they were receiving from private practitioners. Complaints were also received from the medical schools that the various public services of the Ministry of Health were making it difficult for them to present early cases to their students, a difficulty which he had apprehended for many years and in which he had never thought that there was any definite sign of improvement. Nevertheless, if this was the considered opinion of the committee he would be glad, for he would be able to use it in his rejoinders to these officers' complaints.

Prof. LEATHES said he had been surprised himself that the answers of the licensing bodies had been favourable. Important bodies had, however, not replied, and their answers might corroborate Sir George Newman's impression.

Sir LESLIE MACKENZIE remarked that unless adequate use was being made of public sanatoriums, dispensaries, and institutions, students could not be said to be receiving adequate information on tuberculosis.

Dr. E. K. LE FLEMING observed that the whole question was intimately linked up with preventive medicine, and he hoped that it would come before the Council in that relationship at a later date.

Dr. LETHEBY TIDY pointed out that it was not necessary to have the same early case under observation for a prolonged time. The reply from the London Hospital had been favourable, but some of Sir George Newman's communications had come from tuberculosis officers who had dealt with students trained in that hospital.

The committee was asked to report again when they had heard from the eight bodies who had not yet replied.

### South African Public Health Diploma

Sir GEORGE NEWMAN introduced the report of the Public Health Committee, which contained a statement by the legal advisers of the General Medical Council on the diplomas in public health of South African universities. In December, 1931, the South African Medical Council had written to the G.M.C. about the inability of the latter to recognise these diplomas, and asking whether, if a Medical Bill were introduced into Parliament, it would probably include power to recognise them provided that the standards were satisfactory. The Registrar had replied in May, 1932, expressing the Council's regret that it could not recommend giving the Dominions power to grant registrable diplomas in public health. Differences in governmental systems and social services were so fundamental that the training under one system could not readily be made equivalent to the training under the other. The matter was discussed at an international congress held at Cape Town under the auspices of the League of Nations, when Sir George Buchanan, for the Ministry of Health, had communicated with the Council which had then sought legal advice. Diplomas of public health granted by British licensing bodies, it was pointed out, were registrable under the Medical Act of 1886, and although colonial practitioners could be registered in virtue of a degree guaranteeing their proficiency in medicine, surgery, and midwifery, this provision did not apply to diplomas of public health. Moreover, a doctor who obtains a British D.P.H. can only have it registered if he is already on the register. In order to make overseas public health diplomas registrable in this country it would be necessary for Parliament to amend Section 21 of the Act by inserting after "granted by any college or faculty . . . in the United Kingdom" the words "or any British possession to which Part II. of this Act applies." The committee recommended the Council to approach the Privy Council with a view to the introduction of amending legislation on the lines suggested by the legal advisers, and the Council adopted the recommendation.

### Other Committee Business

The Education Committee proposed the revision of the Council's resolution on the standard of chemistry and physics to be required of students before entry on the medical curriculum. The new draft includes an additional resolution providing that the knowledge of elementary chemistry and elementary physics required before entrance upon the medical curriculum proper should be supplemented during the first or second year, or both, by further instruction and examination in these subjects adapted to the special needs of the medical student and coördinated with the teaching in the later stages of the curriculum.

Sir HENRY DALE, introducing the report of the Pharmacopœia Committee, said that the number of copies of the British Pharmacopœia, 1932, sold since May 18th, was 3334, and the total number of copies sold to date was over 33,000. The Pharmacopœia Commission have reported to the committee that they have under consideration a proposal for an addendum to the new Pharmacopœia, which shall include any necessary changes in standards, and monographs on such new drugs as may be considered suitable for official description. Research into pharmacopœial problems continues, and work has been commenced at the new laboratory at the office of the G.M.C. The Commission has relinquished the accommodation which has been put at their disposal during the last four years by the generosity of the Pharmaceutical Society.

### Penal Cases

CHARGES OF CANVASSING

*The Case of Steven Tait Pottinger*, registered as of Lyndhurst, Willenhall, Staffs, M.B., Ch.B. 1925, U.Edin., who had been summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner, you have canvassed patients of Thomas Maitland Crawford

and Armin Frank Maximilian Fuoss and other patients as mentioned below, with a view to inducing such patients to become patients of yours. In particular: (1) In or about the month of January, 1933, you canvassed one Levi Day, who and whose family were patients of the said Thomas Maitland Crawford, and subsequently without his knowledge or consent obtained possession of his medical card and signed or caused to be signed an intimation to the Insurance Committee of his desire to change his doctor, and subsequently signed the transfer slip. (2) In the early part of 1933 you canvassed one Eli Day, brother of the said Levi Day and a patient of the said Thomas Maitland Crawford, and without his knowledge or consent obtained possession of his medical card and signed or caused to be signed an intimation to the Insurance Committee of his desire to change his doctor and subsequently signed the transfer slip. (3) In or about the month of January, 1933, you canvassed one Mrs. Alice Cattell, a daughter-in-law of Mrs. Levi Day, and endeavoured to obtain from her the medical cards of her husband and the rest of Mrs. Day's children, who were patients of the said Thomas Maitland Crawford. (4) In or about the month of January, 1933, you canvassed one Mrs. Martha Gibbons with a view to the transfer of her husband Richard William Gibbons, and of her daughter Hilda Gibbons, from the list of the said Armin Frank Maximilian Fuoss to your own list. (5) Early in 1932 you canvassed one Mrs. Harriet Loftus and endeavoured to obtain from her the medical cards of her family with a view to their being transferred from the list of Dr. Tonks, then recently deceased, to your own list. (6) Early in 1932 you canvassed one Mrs. Lucy Marion Talbot with a view to the transfer of her husband Henry Victor Talbot to your own list. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainants were the Medical Defence Union.

Mr. Pottinger appeared accompanied by Mr. Thomas Carthew, counsel, instructed by Messrs. Le Brasseur and Oakley, solicitors, on behalf of the London and Counties Medical Protection Society. Mr. Oswald Hempson, solicitor, prosecuting on behalf of the Medical Defence Union, explained the method of transferring patients from the panel of one doctor to that of another. Mrs. Levi Day, he said, had been taken ill, and Dr. Pottinger had been sent for. He had pronounced her seriously ill, and said that treatment would cost 30*s*. a week, but that if her ten children would transfer to his panel he would treat her for 10*s*. a week. On subsequent occasions he had approached other members of the family and asked them for their panel cards, repeating this offer. He had actually searched the house for panel cards. Protests had been made when he had searched in various cupboards and chests of drawers. He had tried to open a bureau in the front room and found it locked. In spite of a protest from Mrs. Stringer, one of Mrs. Day's daughters, he had opened a drawer and had taken out several panel cards, put them in his pocket, and left the house. These were the cards of Mrs. Day's husband, his brother, and another daughter, Mrs. Fleming. The cards had subsequently come back from the insurance committee, and on the advice of Dr. T. M. Crawford, on whose panel these persons had been, the two brothers had written saying that they did not wish to transfer. The slips had been already signed by Mr. Pottinger, although in the ordinary way the new doctor did not sign them until the insured person took them to him. Mr. Hempson described the letter received by the Insurance Committee with the cards as a very cleverly prepared document. The letter itself was in one hand and the signatures were obviously in a less educated hand. It was impossible, he said, to imagine a more palpable attempt to deceive. If the facts which he was bringing before the Council were accepted, the letter was clearly a forgery.

Mr. Hempson called Dr. Crawford, who confirmed his statutory declaration, stating that he had at first been on friendly terms with Mr. Pottinger until January of the present year, when he had happened to meet on his rounds Mrs. Harriet Stringer, a daughter of Mr. Levi Day, and a member of one of his medical clubs. She had told him of the transaction concerning the panel cards of her father and uncle. He had made inquiries himself, and had informed the brothers that if they wished to remain on his list they must write to the Insurance Committee saying that they did not wish to transfer.

Mrs. Stringer testified to her statutory declaration and to the facts which Mr. Hempson had put forward.

Mr. Levi Day said that he had not been present at Mr. Pottinger's first visit, but on other occasions Mr. Pottinger had asked him where his panel card was and those of his relatives and children, so that he could have them transferred to his list. On one occasion as witness had been leaving his wife's bedroom Mr. Pottinger had pulled him back and asked him the ages and number of his children. He had said that if all the ten would come on to his panel he would treat Mrs. Day for 10*s*. a week, but that otherwise he would not treat her. On another occasion he had come into the back kitchen and had taken up a bundle of cards from a shelf. Witness had told him that these were not panel cards and had been very annoyed, and asked him to leave them alone. He had seen Mr. Pottinger look through papers in various parts of the house and told him that he had no business to do so. Mr. Pottinger had spoken to him in "The Bridge" public-house, but witness had not said that respondent was the best doctor in the district and that he and his family were going on to his panel.

Mrs. Alice Cattell said that Mr. Pottinger had frequently asked her for her husband's card and those of Mrs. Day's children.

Mrs. Martha Gibbons said that she had called in Mr. Pottinger because Dr. Fuoss had not been at home and her child had been seriously ill. Respondent had said that it was not fair for him to treat the child unless he had the family on his panel. He had picked up her daughter's card and put it in his pocket. He had asked about her husband's card, and when she had told him it was lost he had told her to fill up a form for another. She had done this and given the form to the respondent. The card had been sent and soon afterwards, seeing it behind the clock, respondent had taken it away with him.

Mrs. Marion Talbot testified that respondent had asked her whether her husband would come on to his panel.

Mrs. Harriet Loftus said that on several occasions respondent had asked her for the panel cards of her family. She had told him that this was a matter for them, but he had pressed her to try to persuade them. On one occasion he had taken her by the shoulders and shaken her, and she had since been much annoyed with him.

Mr. Pottinger, giving evidence on his own behalf, said that he had bought his practice in 1930 and the numbers of his panel patients had increased steadily ever since. On Jan. 7th he had received instructions to go to see Mrs. Day, and had arrived at her house between 8 and 9 P.M. He had found three or four women outside, amongst whom was Mrs. Stringer, and had asked them whether the house was Mrs. Day's and who her own doctor was. They had replied that Dr. Crawford was her regular doctor but that she preferred the respondent. They had

asked him his charges, and he had replied that these were 3*s.* 6*d.* a visit but less on a weekly basis; he had offered to attend Mrs. Day for 10*s.* a week. Mrs. Day had been very ill with bronchitis. He had asked if she were on the panel, because if so he would not have had to supply the medicine. He had made no offer of a reduced charge in return for the panel cards of the family. After the first fortnight he had been paid £1; he had never asked for 30*s.* He had seen Mr. Levi Day in the patient's bedroom two days later and had asked him how many children Mrs. Day had had and other details of her personal history to assist him in treating her case. He had met the two Day brothers drinking, and one of them had told him that their mother was very much better, that he was the finest doctor in the district, and that they both wished to transfer to his panel. He had never hunted any house for cards, but had helped Mrs. Stringer to find them after she had opened the drawer. Mrs. Fleming had left her card in Mrs. Day's bedroom for him to take. The letter and signatures had been written by his wife, who acted as his secretary. She was in the habit of writing larger when she signed her name. He had had the letter written at his home because it was difficult to get paper in a cottage and took time; he had thought he was doing absolutely nothing wrong, though he now realised that he had been an utter fool. The Stafford Insurance Committee had accepted the cards; it was quite customary for the cards to be sent in with no signature but the doctor's. He had never looked through any papers in Mrs. Day's house or asked Mrs. Cattell for any panel cards at all. He had not known that she had any children. He could not remember all his panel patients. The baby at Mrs. Gibbons's had had an abscess in the chest and he had treated it in the kitchen; it had made a remarkable recovery and in gratitude—so he assumed—Mrs. Gibbons had said that she would give him her daughter Hilda's card and asked him how to get a new one to replace her husband's, which had been lost. Later the child had suffered from necrosis of a rib and he had lost his popularity with the family. He had never asked Mrs. Loftus for panel cards, had never been in her house, and had never shaken her. He had not known that Mrs. Talbot had a husband, as he had attended her parents and had always found her in their house. He had been working 12 hours a day regularly at this time and there had been an epidemic of influenza raging.

Mr. Hempson then cross-examined Dr. Pottinger, who said that he could only explain the accusations as a story made up by the patients because they resented his charges; they were, he said, very easy to offend, and might be annoyed by a change in the tone of one's voice. He had not brought his books with him. He admitted that there was a great difference in the formation of the *D*'s and the *y*'s in the letter sent to the Insurance Committee, and that it was written on a scrap of paper such as might be found in a cottage. It was, he maintained, a half-sheet such as his wife was in the habit of using, and it fitted inside the folded panel card; it had not been selected to suggest that the letter had been written in a cottage.

Mr. Carthew read statutory declarations from six eminent medical men who testified to Dr. Pottinger's high character and honour and found themselves, from their knowledge of him, unable to credit the charges brought against him.

The Council, after deliberation in camera, decided to postpone judgment for a year subject to the usual provisos.

*The Case of Harry Rubinstein*, registered as of 31, Victoria-street, S.C. Road, Dublin, L., L.M. 1928, R.C.P.Irel., L., L.M. 1928, R.C.S.Irel., who had been summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner, you have canvassed former patients of the late George Millar Speers, also a registered medical practitioner, for whom you had acted as locum tenens and whose practice had been purchased by Charles Frederick Williamson, a registered medical practitioner (ten instances given). And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainant was Mr. Charles Frederick Williamson, L.M.S.S.A. Lond., 1931.

Respondent appeared accompanied by Mr. M. Clarkson, counsel, instructed by Messrs. Cohen and Cowen, solicitors.

Mr. Williamson, examined by Mr. Hempson, said that he was 25 years of age, that this was his first venture into practice, and that he had bought the practice for £1500 through a firm of medical agents. He had arrived at an estimate of its value on a record of private patients and of the weekly receipts of the practice shown him by Mr. Rubinstein. He had paid Mr. Rubinstein, through Mrs. Speers, his fee up to Jan. 23rd, but on the 19th Mr. Rubinstein had not come to evening surgery. The records which he had been shown were then not available, and in spite of diligent search he had been unable to find them about the premises. There had been no information to show which patients ought to be visited or were attending at the surgery. On the morning of Jan. 20th Mr. Rubinstein had attended the surgery and witness had asked him for the records, but he had declined to answer any of his questions or to give him any information. He had received complaints from patients that they had not been visited. Witness had made up a visiting list by going through all the panel cards. On Feb. 24th one of the patients of the practice had informed him that Mr. Rubinstein had called on him and told him that he had started in practice in Charles-road, and suggested that he should transfer to his panel. This the patient had done, and complainant had since discovered that several other patients told the same story.

Mr. Hempson put in a number of transfer notification slips sent by the Insurance Committee in respect of patients of the practice. The first notice from Dr. Speers's list was dated Jan. 24th and the last Feb. 2nd. The first transfer from Mr. Williamson's list was dated Feb. 8th.

Evidence of canvassing was given by three patients.

Mr. Rubinstein gave evidence on his own behalf and was cross-examined by Mr. Hempson.

Mr. Clarkson read statutory declarations from three persons mentioned by the complainant who denied that Mr. Rubinstein had ever canvassed them.

After hearing addresses by Mr. Clarkson and Mr. Hempson, the Council deliberated in camera. When strangers were readmitted the President announced that the Council had found the facts proved and had directed the Registrar to erase the name of Harry Rubinstein from the Medical Registrar.

THE QUESTION OF A COMMISSION.

*The Case of Bailey Glemice Dias*, registered in the Colonial List as of Cumberland Villa, Grove-terrace, Highgate-road, N.W.5, L.M.S. U. Bombay 1914, L.R.C.P. Edin. 1925, L.R.C.S. Edin. 1925, L.R.F.P.S. Glasg. 1925, who had been summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner: (*a*) You attempted to obtain from one, P. W. Norman, an optician,

a percentage or commission for yourself in respect of bills for £3 2*s.* and £1 2*s.* 9*d.* respectively of the said P. W. Norman rendered to Miss S. J. Jarvis, a patient of yours, for glasses. (*b*) You attempted to obtain from one, P. W. Norman, an optician, a percentage or commission for yourself in respect of a bill of the said P. W. Norman rendered to A. W. Baverstock, a patient of yours, for glasses. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The complainants were the Joint Council of Qualified Opticians.

Mr. Dias appeared, accompanied by Mr. Hempson, on behalf of the Medical Defence Union, and Mr. J. Scott-Henderson, counsel, instructed by Messrs. Wedlake, Letts and Birds, solicitors, addressed the Council in support of the charges. He called two witnesses and put in letters from Mr. Dias asking for commission.

Mr. Hempson said that Mr. Dias, a native of India, admitted the facts alleged against him. He had been with a firm who had received commission from spectacle-makers. Since he had been in practice on his own he had received commission from chemists, and had not realised that he was not entitled to it from opticians. He had been ignorant that he was doing wrong. His only livelihood was the capitation fees he received in respect of 166 insured patients, and a small income from lodgers.

The President announced that the Council would postpone judgment for a year subject to the usual provisos.

## MEDICINE AND THE LAW

### Food Poisoning or Influenza?

IN Barclay *v.* Spiers and Pond, Ltd., the plaintiff claimed damages for an illness said to be due to food poisoning at the defendants' restaurant; the defendants said it was gastric influenza. Mr. Barclay described how the lentil soup which he ordered one Monday had an acid taste, and how, before he had consumed half of it, he had a feeling of nausea and a general sensation of fainting and collapse. He was unable to eat the fried sole he had ordered to follow; the feeling of sickness increased, he went back to his office and was obliged to go home, where he was violently sick. He was ill for 11 months and away from work for a year. The defendants gave evidence of the constituents of the soup, the vegetables and flavouring, butter, hot milk, and a ham-bone; no canned food was used. Plaintiff's counsel concentrated upon the ham-bone as the source of the alleged bacterial infection; a medical witness said a ham would develop toxin in 24 hours. The defendants' chef recounted the history of the ham. It came in on that Monday morning and figured on the menu as braised ham. He sawed off the knuckle-bone, chopped it into four pieces and put it into the soup, which was strained and kept in a stone jar standing in boiling water; 13 or 14 portions of the soup were served to customers, and the rest was finished by the staff next day. For the restaurant it was said that nobody else complained; a waitress suggested that the plaintiff looked ill when he came in. The plaintiff and his wife gave evidence that at an interview the management had admitted liability for the poisoning and had discussed the amount of compensation. This the defendants denied.

The plaintiff's doctor, who saw him on the day after the meal, had no doubt he was then suffering from food poisoning. The patient was confined to his bedroom for several weeks; he also suffered from weakness of the muscles of the heart. It was unusual, the witness said, but not very unusual, for food poisoning to take effect so quickly as had happened in Mr. Barclay's case. He agreed in cross-examination that he had known no previous case where food poisoning had lasted a year. He admitted he had said to a doctor who was examining the patient on the defendants' behalf that the absence of diarrhœa forced him to conclude that the patient's condition could not be proved due to food poisoning. When asked about the possibility of gastric influenza, the witness said the patient's subnormal temperature was inconsistent with the suggestion. On the other side, a doctor called by the defendants stated that the symptoms pointed to gastric influenza rather than to poisoning. Poisoning without diarrhœa was very rare, and he had himself never known a case of food poisoning resulting in almost immediate collapse. The conflict of opinion, as well as the dispute of facts, caused the jury to disagree. The result is that the plaintiff is free to begin his action all over again.

### Murder by Mental Hospital Patient

At Birmingham assizes last week Joseph Millard was found "guilty but insane" on a charge of murdering his wife at their home on Nov. 22nd. Millard, said the prosecution, had also murdered his three children at the same time. He was a man of good character who, after a long period of unemployment, had gone into the Dudley Road Hospital. He complained of obscure pains and apparently had delusions that the doctors were conspiring to kill him, and that the nurses tried to inject germs into his body to make him insane. Two days after admission he tried to run out of the ward without his clothes; that night he had to be forcibly tied to his bed. He was then transferred to Ordington House, a public assistance institution, for observation of his mental condition. There was medical evidence that at Ordington House he was violent and had to be confined in a padded cell. The fact which naturally surprised the court was that a mental patient in this condition had been discharged from the hospital on the application of his wife a few days later. "If that is the law," observed the commissioner who was trying the case, "the sooner it is altered the better." It was explained on behalf of the local authority that an inquiry had already been set on foot. The patient, it seems, had not been admitted to hospital on an order under the Lunacy Act, and this fact presumably made it difficult to detain him when his wife applied for his discharge. Further light will doubtless be shed on the facts when the inquiry is completed. Meanwhile it is possible to make the general reflection that the law courts, by awarding huge damages against medical practitioners on allegations of wrongful certification or otherwise, have not exactly encouraged the medical profession to run any risks with the law.

## BRITISH INSTITUTE OF RADIOLOGY

ON Dec. 8th Dr. STANLEY MELVILLE took the chair at a discussion on radiotherapy, with special regard to the

### Value of Hard and Soft Rays

Dr. W. LEVITT discussed the meaning of the term radiosensitivity. He advanced the view that the all-important factor in determining whether a malignant growth would respond to radiations or not was a question of dosage. In some cases, such as

seminoma and lymphosarcoma, the requisite dosage could be applied without obvious effect upon the healthy tissues. These were the cases we have learnt to call highly radiosensitive. In certain other cases, such as carcinoma of the cervix, the requisite dosage would produce a moderate, though recoverable, injury to the surrounding tissues, and these we have learnt to term moderately radiosensitive. In still other cases, such as carcinoma of the rectum, the requisite dosage could not be given without running the risk of severe damage to the surrounding tissues, and these are the radio-resistant cases. It was known that carcinoma of the œsophagus tends to be of a histological type which is moderately radiosensitive, and arguing on these lines it should therefore be possible to apply to these cases a sufficient dose to cause disappearance of the growth without undue damage to surrounding organs. He had recently treated at St. Bartholomew's Hospital a series of eight unselected cases of carcinoma of the œsophagus by a new method designed to ensure adequate dosage to the œsophageal growths, and of these eight cases, all of which had high degrees of obstruction, seven were now swallowing normally, and in six the disease seemed to have disappeared completely. One patient had been at work for nearly six months; the others were very recent. In all these cases general reactions were produced by the treatment; yet seven of the eight patients were now swallowing normally. He had no doubt that the best results were only to be obtained by the use of adequate doses of hard (or short wave-length) radiations. In Paris, Frankfurt, Berlin, Stockholm, and New York the use of soft rays and small doses in malignant disease had long since been abandoned.

Dr. RUSSELL REYNOLDS emphasised the value of long wave-length therapy, particularly for benign growths, while admitting that the shorter wave-lengths were more valuable for carcinoma. Any condition that would recover under treatment with long waves should, he thought, be treated with them, on account of their less harmful effect on the blood-cells.

Dr. G. F. STEBBING said that the improved results obtained by treating malignant growths by X rays had coincided with the shortening of the wave-length of the radiation used. Intensity of radiation and the time over which it was administered were both important factors, but the greatest improvement in the future was to be expected by the use of shorter waves. Such waves had two valuable properties: (1) greater penetration without damage to the overlying skin, particularly where it was possible to treat the growth by a number of converging beams; and (2) selective action on malignant tissue. This selective action was not universally admitted, but many clinicians and some physicists—e.g., Failla—were convinced of it. Once it was proved that short waves could give results not to be obtained in any other way, he thought there would be no difficulty in getting X ray apparatus of higher voltage and large masses of radium.

Dr. HERNAMAN-JOHNSON said he had leaned to the view that X rays had a selective destruction action on cancer cells, and that if a "critical" dose could be given all would be killed. Accumulating evidence had, however, convinced him that the action was mainly indirect, a vital reaction in which the surrounding tissues played a heavy part. On this view the healthy tissues were allies instead of mere hindrances to efficient dosage. On the question of the relative value of short and long wave-lengths he could say little. A sufficient dose must be got to deep-seated lesions, but whether the wave-length was of importance there were no sufficient data to determine.

Dr. D. WEBSTER said that he was not satisfied that there was any true differential action dependent on wave-length, and he thought that all physicists except Failla and Russ agreed with him. In his experience similar results could be obtained with X rays or radium.

Dr. F. ROBERTS said he thought the shorter wave-lengths were of advantage owing to the greater depth it was possible to reach with them, but he was not convinced of the differential action of short waves.

Dr. L. A. ROWDEN stressed the importance of rapidity of growth as a factor of radiosensitivity, and said he found the administration of potassium iodide during radiation a help.

Dr. N. S. FINZI said that the shorter the wave-length the better the result, and referred to cases of his own in which the healing of the growth was obtained with very little reaction of the healthy tissue by short waves.

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### British Institute of Radiology and Roentgen Society

The annual dinner of these united bodies was held on Friday, Dec. 8th, at the Trocadero Restaurant, London, Dr. Stanley Melville, president, being in the chair. The toast of the Institute was proposed by Mr. Thurston Holland in a humorously colloquial style, concluding with a warm congratulation to the society in having elected the present occupant of the presidency to direct their activities, when he set out the assiduous part that Dr. Stanley Melville had played in the advancement of radiology. Dr. Stanley Melville, in returning thanks, said that the institute was originally started as an act of faith on the personal guarantee of four medical members, but in 1927 it amalgamated with the old-established Roentgen Society. The membership, he said, now consisted of medical radiologists and other medical men in sympathy with their objects: physicists, without whose guidance progress would have been impossible, and leaders in the industrial world. Scientific knowledge had secured progress on the practical side. He referred particularly to the attitude of the manufacturers when certain tragedies among the workers proved the dangers of their duties. The dangers were sadly appreciated, but the means of combating them were then unknown. At this juncture, in 1921, the X Ray and Radium Protection Committee was formed, and through the good offices of Mr. G. W. C. Kaye, D Sc., was granted the resources of the National Physical Laboratory. The first recommendations published by the committee required the immediate scrapping of apparatus and the disorganisation of manufacturing specifications. Without a moment's hesitation the British manufacturers came whole-heartedly into the new scheme regardless of considerable financial loss. At the International Congress, held at Stockholm in 1928, the British recommendations were adopted as the "International Standard of Protection," when the British manufacturers got the meed of praise that was their due. The example was soon followed by other countries, which until then had not the foggiest idea of what protection implied. To this same body of people was due the remarkable exhibition of apparatus during the present annual congress. The toast of the Guests was proposed by Mr. Cuthbert Andrews, who was very thorough in the way in which he worked through the lists of guests, making biographical notes as he went along. Prof. J. C. M'Lennan and Sir Squire Sprigge replied.

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HOLME LACY AS MENTAL HOME.—Subject to certain structural improvements, the Ministry of Health is now prepared to give general approval to the scheme of the Herefordshire county council for using Holme Lacy as a home for private mental patients. The house, for long the seat of the Earls of Chesterfield, was presented to the council by Mrs. Noel Wills. The scheme will require a capital expenditure of £18,000.

# CORRESPONDENCE

## BORROWING MONEY TO BUY A PRACTICE

*To the Editor of* THE LANCET

SIR,—I have read with great interest the leading article on pages 1324–25 of THE LANCET of Dec. 9th. Reference is there made to the scheme for the advance of additional capital worked by the Medical Sickness Annuity and Life Assurance Society, but it should be recalled that the original scheme of this kind, upon which all others are based, was that worked out in 1924 and 1925 between the committee of management of the Medical Insurance Agency and the managing director of the Friends' Provident and Century Life Office. This scheme was devised throughout for the protection of the medical man, and embraced all the desirable points mentioned in your article.

A similar scheme has for several years been worked, with equal regard to the interests of the medical practitioner concerned, by the Clerical Medical and General Life Assurance Society, and it is doubtless the success of the schemes worked by these two companies and the Medical Sickness Annuity and Life Assurance Society, which has induced such a large number of companies and firms to exploit the medical profession in the manner and to the extent which has led to the disclosures of Mr. Townley and others, and to the present action which it is proposed to take to deal with the existing situation.

I am, Sir, yours faithfully,

L. FERRIS-SCOTT,
Hon. Sec., Medical Insurance Agency, Ltd.

B.M.A. House, Tavistock-square, W.C., Dec. 9th, 1933.

## THE MIDDLE-CLASS PATIENT WHO CANNOT PAY

*To the Editor of* THE LANCET

SIR,—Your leading article of Nov. 25th and the letter from Dr. Alfred Cox last week have created a considerable amount of interest. Will you allow me, as one of the founders of the British Provident Association in collaboration with the late Dr. Gordon Dill of Brighton 12 years ago, to emphasise what may be taken as the essentials of a sound provident scheme for the middle classes?

1. It should be sufficiently wide as not to be parochial. Ideally this width should be national.
2. It must be actuarially sound. This means that subscriptions need to be of a rate which will enable the subscribers to be assured of grants in aid which will not render the pool bankrupt.
3. Benefits should be as wide as possible within the range of the premia.
4. All financial transactions, including the payment of grants, should be between the central organisation and the subscribers.
5. The scheme should in no way be linked with any one institution, nursing-home, or hospital, or even group of hospitals.
6. It must in no way interfere between the medical practitioner and the patient.
7. It ought to be a mutual aid and not a profit-making concern.
8. And, finally, it must be free from the least suspicion of charity.

It can be claimed without gainsay that the B.P.A. fulfils each and all of these fundamental points. For this, and many other reasons, it would seem that the Association, which has come to stay, should be given the full support of the medical profession in Great Britain. To this end a number of influential medical practitioners in provincial cities and towns are seeking to establish branches with a view to arouse interest and obtain subscribers in their local centres.

All further details can be obtained from the secretary, B.P.A., 30, Lancaster-gate, London, W.2.

I am, Sir, yours faithfully,

Dec. 11th, 1933. W. MCADAM ECCLES.

## EPIDEMIC VERTIGO

*To the Editor of* THE LANCET

SIR,—Having seen a few cases of what I should like to call epidemic vertigo and fallen a victim to the complaint I should like to learn whether it is very common at present. Some number of years ago there was an epidemic, but on that occasion I saw only one case.

Most of the cases which have come under my notice have been in diabetic subjects, but the first case this year was a brother medico, under 40, who told me he had thought that he was developing a common cold for several days and then awakened in the night feeling sick. He got out of bed to obtain a utensil into which to vomit and was intensely giddy. He had to return to bed, and found that so long as he kept his head absolutely at rest he did not feel giddy, although he had intense nausea and vomited from time to time. When I saw him his symptoms called to mind the case I had seen several years ago and I was able to reassure him. His temperature was subnormal and his blood pressure very low. He had no aural symptoms nor any changes in his fundi. For several days he found that if he tried to get out of bed vertigo drove him back. His recovery to normal health was slow but work prevented him from taking the holiday he was ordered.

A few days later a case was referred to me of high blood pressure, along with diabetes mellitus, because the patient had had intense giddiness which had been attributed to hyperpiesia. The intensity and short duration of the vertigo led me to the conclusion that it was a case of epidemic vertigo. The next case was a patient who has advanced diabetes mellitus, well controlled with insulin; from time to time he reports in order that samples of blood may be taken and the sugar content estimated. He gave a history of a few days' intense vertigo whilst in the north of England; he had to retire to bed. The fourth case came from Cambridge and was very similar to the third except that, as soon as he was well enough, he came into a home in London, where I found that his blood pressure had fallen considerably and for a short time he needed an increase in the doses of insulin. This patient returned home on his original diet and dose of insulin with the sugar content of his blood at all times below 0·15 per cent., and he had another attack of the same complaint a week later.

Three of the staff in my house have had the complaint, as well as my secretary and her husband. In some of these diarrhœa after the third day has been quite distressing. About 14 days ago I thought that I was developing a cold, but it made no progress. A week ago I awakened about six o'clock, and on attempting to read found that the print moved. I got up, but had to sit down to shave and wash; the giddiness became intense and I returned to bed. Any movement of my head was followed immediately by intense vertigo and nausea. As soon as possible I gave myself a rectal injection of grs. 30 potassium bromide and sent for the doctor whom I had seen with an attack some weeks previously. I selected

him because I feared that if someone who was not acquainted with the condition were to see me he might alarm my wife. Thorough examination showed no physical evidence of disease except abnormally low blood pressure. In my case recovery was rapid, but I was told that I looked too ill to get up for several days. Is this complaint sufficiently common to justify it being described in text-books? I think that the evidence all points against it being hypoglycæmia in the diabetic cases because, apparently, it was associated with hyperglycæmia.

I am, Sir, yours faithfully,

London, W.1, Dec. 8th, 1933. O. LEYTON.

## ARTERIAL DISEASE OF THE EXTREMITIES

*To the Editor of* THE LANCET

SIR,—Quite apart from the pathological, bacteriological, and experimental evidence on which the tuberculous ætiology is based, the clinical features of Bazin's disease would not permit the acceptance of Mr. Dickson Wright's suggestion that it is a form of ischæmic ulceration. He is evidently confusing ulcerated erythema pernio (chilblain), often seen on the affected limb in infantile paralysis, with ulcerative erythema induratum (Bazin's disease), which starts as a hypodermic granulomatous nodule surrounding a tuberculous endophlebitis.

I am, Sir, yours faithfully,

Leeds Dec. 7th, 1933. JOHN T. INGRAM.

## BLOOD PRESSURE AND SUBARACHNOID HÆMORRHAGE

*To the Editor of* THE LANCET

SIR,—In his paper on this subject (Nov. 11th, p. 1087) Dr. M. C. Andrews gives figures which are very interesting from an experimental point of view, but I do not think we should assume too readily that lumbar puncture is the only rational treatment for the condition.

In the first place, although we have plenty of opportunities for studying the blood pressure after a stroke, we know very little of the fluctuations before it, which culminate in hæmorrhage. This is bound to be so, because patients who ultimately have strokes usually enjoy good health, in spite of their high blood pressure; so that one usually finds that it is months or years since one has taken the pressure. Very often one has not seen the patient at all before the stroke. I myself have only one record which throws any light on the question—namely, of a woman of 63 who used to come for periodic routine examination. For four years her blood pressure had varied between 200/114 and 224/116. On Dec. 13th, 1932, it was 216/116; nine days later she had a stroke, and a few minutes after it the blood pressure was 226/96; not a very great change. She died in 14 hours, and post mortem there was a large hæmorrhage in the right frontal lobe breaking through into the lateral ventricle, several small punctate hæmorrhages into the substance of the frontal lobe, three in the medulla, and some subarachnoid hæmorrhage round the pons. Dr. Charles Læwsen (Brit. Med. Jour., 1930, ii., 313) described a stroke which took place immediately after the blood pressure had been taken, but did not state what the effect was.

That the cause of cerebral hæmorrhage is not simply the height of the systolic or diastolic pressure is suggested by some experiments quoted by Fishberg (Hypertension and Nephritis, 1931), where an enormously high pressure (1520 mm. Hg) caused rupture of the cerebral vessels in only two out of thirty cadavers, both syphilitic, and in only two out of ten cases from persons known to have had hypertension during life. Can we, then, believe that a temporary rise of, say, 50 mm. pressure, even if we knew that this commonly precedes it, is the cause of spontaneous intracranial bleeding? It may be urged that the fact that sudden death from stroke sometimes occurs at stool is due to the raised pressure caused by straining; but, before granting this, one ought to inspect the stool. Is it not equally possible that the call to stool is an early symptom of the stroke? I have had four deaths at stool in my practice: two from supposed heart failure (no post-mortem), nature of stool not noted; and two from cerebral hæmorrhage. One was a man of 60 whom I had never attended, who was found dead in the lavatory having passed a bulky loose motion; he had extensive subarachnoid hæmorrhage. The other was the woman of 63 referred to above; she was seized with violent headache and felt "as if something was going down her neck," and was taken to lie down; a few minutes later she was found semiconscious in the lavatory, having passed a watery evacuation. One can hardly suppose straining at stool to have caused the hæmorrhage in either of these cases.

It has been suggested that arterio-sclerotic narrowing and closure of the arterioles produces areas of softening in the brain, which deprive the vessels of their normal support, and that this is an important cause of hæmorrhage; if this be the case, surely lowering of the subarachnoid pressure by withdrawing cerebro-spinal fluid will increase the bleeding. We apply local pressure to check bleeding if we cannot tie the vessel. Is it, therefore, any more rational to risk increasing the hæmorrhage by lumbar puncture than to risk pressure anæmia of the brain by reducing the systemic arterial pressure by blood-letting? Very good results have been claimed for venesection in apoplexy (Proc. Roy. Soc. Med., 1927, xx., No. 10). Nine out of eleven of the cases mentioned by Dr. Andrews died; no doubt they would have done so in any case, but the treatment does not seem to have been very successful.

Cerebral hæmorrhage is often multiple, small punctate lesions lying around the main mass. These may easily be missed at an ordinary post-mortem, but can be seen if the brain is hardened for a few weeks before being cut. This suggests the possibility of a further factor—namely, localised flushing, probably temporary, of the area destined to become the site of a hæmorrhage. The old view that the cerebral vessels have no vasomotor supply is no longer tenable (McAlpine, Quart. Jour. Med., October, 1933). Local flushing is conjectural, as one cannot make direct observations in such cases; but hyperpietic patients are subject to other hæmorrhages, besides cerebral; epistaxis is by far the commonest, and here one can actually see what takes place. If one examines such a nose when it is not bleeding one sees a few dilated arterioles on the septum—arterioles which have lost part of their supporting tissues. But every nose which presents these appearances is not subject to violent spontaneous bleeding; some physiological spark is required to fire the anatomical powder. Consider now the aspect when the nose *is* bleeding; one catches glimpses of arterial pulsation surrounded by widespread capillary oozing from an intensely congested mucous membrane. To touch the bleeding spot with a cautery is no easy matter; but if one can apply it to a reasonably dry surface, the bleeding will sometimes stop. I do not believe that this is due to obliteration of the vessel, for this would hardly

check the capillary oozing; moreover, I have known violent bleeding to recur two days after it had been checked by the cautery, which would hardly happen if the vessel had been destroyed. I think the cautery must bring about reflex contraction of the flushed vessels; but this conclusion obviously requires extensive observation and experiment.

The question of life or death in intracranial hæmorrhage is primarily whether the hæmorrhage can be stopped; if it can, the patient may make a good or even complete recovery; if not, he will certainly die. Analogy is hazardous, but I will risk drawing one between cerebral hæmorrhage and epistaxis, and suggest that, so far as lumbar puncture succeeds, it does so by causing reflex contraction of the vessels in the flushed area, rather than by adjusting the balance between the blood and subarachnoid pressure. Before any conclusion can be drawn between the relative merits of lumbar puncture and venesection, in intracranial hæmorrhage, a large number of cases should be treated by each method, preferably by the same observer; this has not, so far as I am aware, yet been done.—I am, Sir, yours faithfully,

Westgate-on-Sea, Nov. 26th, 1933. FREWEN MOOR.

## TONSILLECTOMY

*To the Editor of* THE LANCET

SIR,—At the important debate last Thursday in the lecture hall of Manson House, on the motion "that operations for the removal of tonsils are too often performed without adequate cause," the chairman asked me quite unexpectedly to take part in the discussion, but at the moment I did not feel I could add any useful contribution. On thinking the matter over, however, I should like to make a few observations.

I believe that tonsillectomy is almost, if not quite, useless as a preventive of rheumatism in children, particularly if one attack has already occurred. If the tonsils are definitely septic no doubt their removal may be desirable, but the parents should be told that the operation is not likely to affect the tendency to rheumatism and particularly, unfortunately, the risk of recurrent rheumatic carditis.

It was stated in the debate that 75 per cent. of the new boys entering Eton have had their tonsils removed and that this percentage is materially increased during the years of their school life. To me it seems impossible that all these tonsillectomies can be really necessary. If required for so large a proportion of boys well looked after and living under the best conditions from their earliest days, surely the operation would be desirable in an even larger proportion of children amongst those brought up in less favourable surroundings. In other words, we should soon approach the position that nearly all children should have their tonsils removed which, to my mind at least, is a reductio ad absurdum. Some years ago, when perhaps tonsillectomy was not quite so popular as it is to-day, the medical officer of one of our large public schools told me that many boys in their earlier years at school had enlarged tonsils, but that in most of them the enlargement was subsiding or had disappeared by the time they left school. Now we are not content to wait and see; the tonsils are, or are supposed to be, enlarged and are at once condemned. Fortunately, as Mr. Tilley told us, nature does its best to replace the missing tissue.

Another speaker at the debate drew an eloquent picture of the improvement in the health and physique of the rising generation, which he apparently attributed entirely to the increasing frequency of removal of tonsils and adenoids. Surely this is not *the* factor, but at most one of the factors in the improvement; a number of others are almost certainly of far greater importance than operations on the throat. Either the statement was a mere oratorical exaggeration, in which case it has no scientific value, or else it was a striking example of the narrow outlook of the specialist.

Lastly, as one of the speakers reminded us, tonsillectomy is a serious operation, its possible sequelæ are numerous and serious, its fatalities, even in skilled hands, by no means negligible.

I am, Sir, yours faithfully,

J. WALTER CARR.

Cambridge-terrace, N.W., Dec. 8th, 1933.

*** We wished to report this debate but were asked by officers of the Fellowship of Medicine not to do so.—ED. L.

## THE CONSULTANTS' PANEL

*To the Editor of* THE LANCET

SIR,—May I respectfully concur with every word in Mr. Mason's letter in to-day's issue of THE LANCET. For the benefit of those who have been puzzled by some of the points raised by Mr. Mason I may say that the British Medical Association is presenting a scheme to provincial consultants, under which there will be announcements of wholesale reduction of fees. Mr. Mason complains that the scheme is not wanted, that neither he nor anyone else asked for it, that it is cumbersome and superfluous, that it replaces confidential understanding between practitioner and consultant, and that those who are most concerned are in least voting power. I could not have put it better myself. Mr. Mason might have added that any consultant who thinks that price-cutting leads to bigger business is very much mistaken. And I might add that if the scheme is persisted in there will be endless friction in places where now harmony exists.—I am, Sir, yours faithfully,

Sunderland, Dec. 9th, 1933. G. F. WALKER.

## DIET AND WEIGHT

*To the Editor of* THE LANCET

SIR,—It is not because I think that, to the general, caviare is an intellectually stimulating food that in my letters to you on the subject of body-fat I have avoided much appeal to the particular, but because I wished to keep the argument on the plane of deductive reason. Dr. Hales, in your issue of Dec. 9th, now puts to me such a definite but such a beautifully irrelevant question that even the child-like faith of a fat man in the goodness and guilelessness of his professional brethren must suspect a trap. That I can find no trap is probably a tribute to your correspondent's lack of guile, but in case I am falling headlong my defence will be that I probably suffer from cerebral lipæmia, with a definite intellectual scotoma, for I confess that Dr. Hales's question seems to me to have no bearing on the subject at issue. The fact that athletic old men are usually thin and "wiry" seems to me as little germane to the issue as that new-born babies are generally fat and flabby. Neither observation would appear to affect my contention that the fat deposits of an individual are usually a result of a glandular idiosyncrasy, which in turn is a result of an inherited protoplasmic experience, and that to attach less importance to these in-vivo experiments than to the in-vitro experiments of modern investigators who look upon obesity as necessarily an evil is a foolish proceeding.

Although I do not think it affects the argument either way, I can, however, give a positive answer

to Dr. Hales's question. A few weeks ago I spent a day with a relation of mine who is nearly 80 years of age. He weighs just a little short of 200 pounds and has a definite "corporation." We played tennis in the morning, golf in the afternoon, and billiards after dinner. I hate to publish my shame, but he beat me at the latter two games and we dead-heated at an excellent dinner. He easily beat me at the "Taylor 1912," which we drank to celebrate the "Royal" he got this autumn.

I am, Sir, yours faithfully,

Dec. 10th, 1933. CHRISTOPHER HOWARD.

## ANNULAR SHADOWS IN THE LUNG

*To the Editor of* THE LANCET

SIR,—The case, Pleural Ring *v.* Cavity, has raised such heat in the past as the importance of these appearances seems hardly to justify. It might help towards a satisfactory verdict if it could be explained:

1. Why these flimsy creations often slowly alter their position in the chest without undergoing change of shape or size?

2. Why, at any rate occasionally, the circumference breaks up into segments?

3. How it is that no one apparently has ever as yet in England coaxed any lipiodol into these sometimes enormous areas?

No single one of the theories seems to fit all the cases; but many of the rings behave as if caused by a mycelial growth.

I am, Sir, yours faithfully,

Petersfield, Hants, Dec. 9th, 1933. FRANCIS JUPE.

## HELMINTHS AND PELLAGRA

*To the Editor of* THE LANCET

SIR,—In your last issue Colonel Clayton Lane seeks to emphasise the importance of the association of pellagra with helminthic infections noted by Biggam and Ghalioungui and previously by Woodcock and states that it is one that cannot be disregarded in the future, rather suggesting that helminthiasis should be looked upon as a specific factor in the causation of the disease "in addition to deficient nutrition." It has been so held by some observers just as others have believed that amœbiasis was a specific factor in causation. The truth would appear to be that both may play a part in causing *deficient nutrition*. In treating a population suffering with pellagra it is just as necessary to eradicate worm infestations as it is to exterminate helminthiasis in populations to be treated for syphilis or leprosy if good results would be obtained. Deficient nutrition may result from deficient assimilation rather than deficient diet and many factors may be involved. In regard to pellagra, some of the most instructive cases are those associated with organic disease of or operative interference with the gastro-intestinal tract, and alcoholism.—I am, Sir, yours faithfully,

London, W., Dec. 9th, 1933. HUGH S. STANNUS.

## DISCLAIMERS

*To the Editor of* THE LANCET

SIR,—The *North Mail*, in its issue for Dec. 9th, published in a conspicuous manner an account of the case of excision of the œsophagus which appeared in THE LANCET of the same date under my name, and an interview with me is mentioned. I had nothing to do with the publication, nor did I grant any representative of the paper an interview. Two newspapers rang me up on the telephone, and in both cases I said I could give no information whatever; but to a direct question from the *North Mail* I replied that the man was alive and well and that the operation was unusual.

Will you publish this disclaimer in the proper part of the paper and let me know if permission was granted to use the illustration which the paper has reproduced.— I am, Sir, yours faithfully,

Newcastle, Dec. 11th, 1933. G. GREY TURNER.

*** No communication was received by the *North Mail* from us with regard to the use of the photograph, though its source is duly acknowledged.—ED. L.

*To the Editor of* THE LANCET

SIR,—In *Reynolds's Illustrated News* of Nov. 26th, 1933, there appears an interview with a "Professor" O. A. Newell, in which he says that "He made investigations in conjunction with Lieut.-Colonel P. J. Marett, medical officer of health for the island" (Jersey). I should be grateful if you would publish this complete denial. I do not know "Professor" O. A. Newell, and have never made any investigations in conjunction with him, nor have I ever corresponded with him. The statement objected to was brought to my notice in a letter sent to me, requesting to be informed as to where a supply of this "cure" could be obtained. Had it not been for this letter I should have known nothing about the article in the paper, and I am unaware whether my name has not been used on previous occasions.

I have called upon the editor of the newspaper in question to correct the false statement referred to and to apologise therefor.

I am, Sir, yours faithfully,

P. JANVRIN MARETT,

Jersey, Dec. 5th, 1933. Lieut.-Colonel.

# THE SERVICES

### ROYAL NAVAL MEDICAL SERVICE

Surg. Lt. W. R. S. Panckridge to be Surg. Lt.-Comdr.

Surg.-Comdr. L. W. Gemmell is appointed to *Pembroke* for R.N.B., Chatham.

### ROYAL ARMY MEDICAL CORPS

Lt.-Col. G. F. Rugg, having attained the age for retirement, is placed on retd. pay.

Lt.-Col. W. J. E. Bell retires on retd. pay.

Maj. & Bt. Lt.-Col. W. H. O'Riordan and Maj. C. T. V. Benson to be Lt.-Cols.

#### TERRITORIAL ARMY

Lt. H. W. Bambridge to be Capt.

W. T. E. Blackmore to be Lt.

#### TERRITORIAL ARMY RESERVE OF OFFICERS

Maj. I. J. Williams, from Active List, to be Maj.

### ROYAL AIR FORCE

Flight Lt. E. Donovan is transferred to the Reserve class D(ii).

### COLONIAL MEDICAL SERVICE

Dr. E. A. Blok and Dr. P. H. Perera have been appointed Provincial Surgeons, and Dr. P. B. Fernando, Medical Superintendent of the Galle Hospital, Ceylon. Dr. W. J. Laird becomes Medical Officer, Sierra Leone, Dr. D. P. Turner, Medical Officer, Nyasaland, and Dr. A. R. Paterson, Director of Medical and Sanitary Services, Kenya.

FOREIGN DECORATIONS.—Dr. Reginald Saint Alban Heathcote has been given the Royal licence and authority to wear the Insignia of the Third Class of the Order of the Nile, which has been conferred upon him by the King of Egypt, in recognition of valuable services rendered by him as Professor of Pharmacology in the Egyptian Faculty of Medicine.

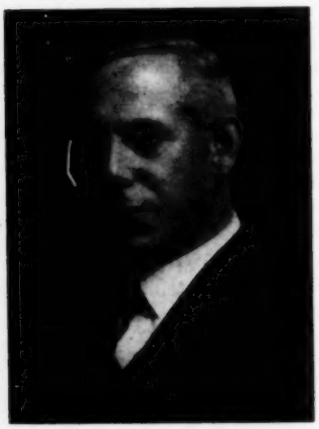
# OBITUARY

## ROBERT PUGH ROWLANDS, M.S. Lond., F.R.C.S. Eng.

SENIOR SURGEON, GUY'S HOSPITAL

WE regret to record the death of Mr. R. P. Rowlands, senior surgeon to Guy's Hospital, which occurred suddenly on Thursday, Dec. 7th, at his house in Wimpole-street, to the grief of a large circle of patients and friends.

Robert Pugh Rowlands was born at Towyn in 1874, and was educated at Dolgelly School, proceeding for his medical training to Guy's Hospital. Here he had a distinguished career, winning prizes in many directions before qualifying as F.R.C.S. in 1901. In the earlier examinations for the medical degree at London University he obtained honours and medals in materia medica and pharmaceutical chemistry, and in 1902 he graduated as M.B., B.S. with the scholarship and gold medal for medicine. In the following year he proceeded to the degree of M.S., this time being bracketed for the gold medal. After holding the usual house appointments, he was elected assistant surgeon to the hospital in 1906, ten years later becoming full surgeon. He had in the meantime served as surgical registrar to the hospital and demonstrator of anatomy in the medical school.



MR. ROWLANDS.

[Photograph by Lafayette

He soon earned a high reputation alike as surgeon and author. He edited several editions of Jacobson's Operations of Surgery, the seventh edition of which valuable work was issued in coöperation with Mr. Philip Turner in 1927. He wrote, mainly in the columns of the *British Medical Journal*, valuable essays on the treatment of appendicitis and various gastric conditions, finally becoming a recognised authority on the surgery of the gall-bladder. What may be regarded as a summary of his views and his technique was published in the columns of *The Lancet* in 1929, being the Bradshaw lecture delivered before the Royal College of Surgeons of England. In this essay, describing the progress of abdominal surgery since Lister's time when little could be attempted beyond the opening of an abscess, he analysed the methods of distinguished predecessors like Lawson Tait and Mayo Robson, and demonstrated the evolution of technique down to the period when Moynihan, William Mayo, Walton, and the author himself became the pioneers. He was able to give with regard to his own work remarkable results following upon operations upon the gall-bladder and bile-ducts.

We owe to Mr. C. H. Fagge the following vivid picture of the man and his work :—

"Rowlands came to Guy's some 40 years ago, his early desire to join the medical profession being no doubt inspired by the example of his uncle, then in practice in Towyn, to whom Rowlands always gave credit for help and advice in his youth. How well Rowlands profited is shown by the fact that on his way to becoming senior surgeon to Guy's and Vice-President of the Royal College of Surgeons, he won innumerable prizes in the hospital and in the University of London, owing entirely to a good brain and unstinted industry. I first came in contact with him as a dresser when he, as a colleague of Dr. E. I. Spriggs, was serving his first three months under Mr. Lucas, I being, at the time, what was known as an 'extension dresser.' Two years later he succeeded me as house surgeon to Mr. Lucas, and in October, 1899, we were again colleagues as demonstrators of anatomy. This close companionship continued for five years, and since that date until recently we have been colleagues on the surgical staff. My most intimate contact with Rowlands was during those years of early struggle, when, ourselves only just embarked in early manhood, we were endeavouring to instruct in anatomy and in some measure to discipline students only a few years younger than ourselves. My chief impression of him at that time is of his modesty and loyalty. What he said he did, and having said that he would take a certain line he never departed from it. His was a nature to invite affection, for his gentleness and kindness of personality made him incapable of hurting the feelings of others. Not a few of my more recent recollections of him are associated with the kindly remarks in which he was pleased to voice his opinion upon some action or statement of mine in committee or council.

Perhaps his most notable exploit was the success with which he carried Jacobson's Operative Surgery through several editions; it could have required no little patience and tact to have worked in harmony with the author during his lifetime, and to have maintained the original features of the work; and to have brought it up to date from each succeeding edition, must have been a constant strain on his hours of freedom from professional work, and must have necessitated unceasing reference to an ever-growing surgical literature.

As operator his chief distinction was delicacy of technique and rapidity of execution. Those who were able, could learn much from his methods even if his teaching by the spoken word was not remarkably explicit. He wrote a good deal and in this showed his greater interest in the surgery of the abdomen than in that of other parts of the body. By his own unaided effort he made for himself a great position in British surgery, and success, when it came his way, did nothing to sully the gentle simplicity of his nature. There will be few with whom he came in contact in this world who will not be made the poorer by his passing."

Rowlands was elected to the Council of the Royal College of Surgeons of England in 1922, and was re-elected in 1930, served as Vice-President of the College, and at the time of his death was a member of the Council.

His term of office at Guy's Hospital had nearly expired, and he was looking forward to retirement in the country where he would have leisure to indulge his devotion to country pursuits and pastimes, and add to his great knowledge of natural history. He married in 1905 Alice, daughter of Mr. Edward Piper, of Bodiam, Sussex, and leaves a widow, a son, and a daughter.

# ST. MARY'S HOSPITAL MEDICAL SCHOOL

## OPENING OF NEW BUILDINGS

In the presence of a gathering whose academic distinction was reflected in the glorious medley of their robes, His Majesty the King, accompanied by Her Majesty the Queen, opened the new medical school and pathological institute of St. Mary's Hospital on Dec. 12th. The order of proceedings was as dignified and appropriate to the occasion as are the buildings to their purpose. A dais had been erected in the library, a beautiful room panelled in oak, and nearly 1000 people were assembled, including students in the gallery, when a procession of professors and lecturers, and the medical and surgical staff of the hospital, passed through the centre gangway to the platform. They were followed by the presidents of the Royal Colleges and other bodies, and the officers of the University of London.

The Duchess of York, as president of the hospital, received the King and Queen and presented to them the Earl of Athlone, Chancellor of the University; Dr. C. M. Wilson, dean of the medical school; Sir Almroth Wright, F.R.S., director of the institute of pathology; Colonel N. E. Verey, chairman of the board of management of the hospital; and Sir Edwin Cooper, the architect. The Duke of York and Princess Arthur of Connaught were present, and Sir Hilton Young, as Minister of Health, was in attendance.

### THE DEAN'S ADDRESS

"The building which Your Majesty and Her Majesty the Queen are honouring to-day replaces a school opened in 1852. That school was a relic of the time when students were apprentices and walked the hospitals, a time before the development of laboratories and scientific medicine. Generations had been constrained to work within those ancient walls because it had been supposed that the public was solely concerned with hospitals and the sick poor, and not with medical schools and the education of the doctor. Now that it has been made plain for the first time in London that a medical school can be completely rebuilt out of British funds, it is our hope that other schools may be encouraged to carry out their plans with the assistance of the public. It has been shown that there are in England men of vision who realise that the health of the people is inseparably associated with the training which the medical schools give to the doctors of to-morrow.

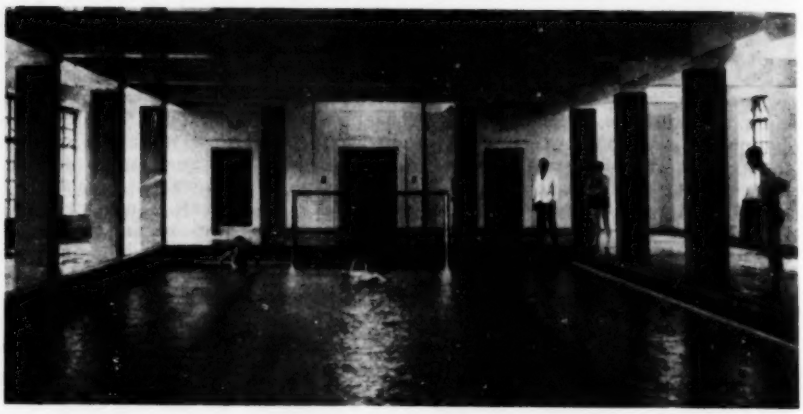
"It would not be fitting that this occasion should pass without recording the School's lasting gratitude to those who have made possible the erection of this building. In giving to a school of medicine they gave with both hands to the future. They gave because they understood before others that the health of the people is in the hands of those who practise medicine. To the late Lord Revelstoke, who began the fund, and to Lord Beaverbrook, without whom our plans would have come to nothing, we owe everything. We can take heart that the plans of this school have passed the scrutiny of two minds so individual and so searching; while the University of London in the very act of building a home of her own has contributed most generously to these splendid buildings, fashioned to our purposes by the genius of Sir Edwin Cooper.

"A part of this building, the Pathological Institute, we owe in great measure to Lord Iveagh. He has been associated at St. Mary's with the workers in this field for many years. He has seen work that possesses the authentic note of permanence and has made provision for its continuance.

"On an occasion like this our thoughts are not in the past, but in the future; with those who will

The new block, showing bridge across Cambridge-place.

come after us and work within these walls. To those of my generation who came through the war, our own life sometimes seems a preparation for something that has already happened, and the only reward of our work that can be worth while is to see young men stepping forward, and perhaps to help them, however little, before they go out into the world.



The swimming bath.

"We assure Your Majesties that Your presence on this occasion will long serve as an encouragement to us to make this school in every way worthy of the honour conferred upon it and of the munificence of which it has been the object. As dean of this school, I have the honour to offer to Your Majesty and to Her Majesty the Queen an expression of our sincere and lasting loyalty and devotion, and to ask Your Majesty to be graciously pleased to declare this building open."

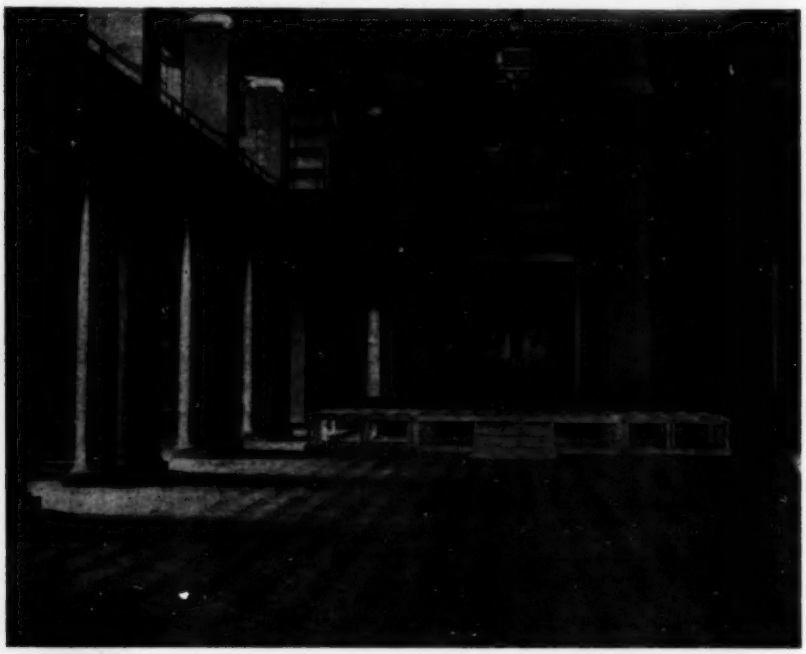
THE KING'S REPLY

The KING said in reply: "The Queen and I thank you for your loyal and dutiful address. We feel a special interest in revisiting St. Mary's Hospital since for close on 20 years I was a predecessor in office of your president, my dear daughter-in-law, the Duchess of York. I recall too that many years ago the skill and care of a nurse from this hospital contributed largely to my recovery from an attack of typhoid fever. Happily, curative and preventive medicine and surgery do not stand still. They are progressive sciences, and this was probably never more true than to-day. The tireless efforts of devoted workers, in the clinical sphere and in the laboratory alike, are ever wresting fresh secrets from nature and adding to existing knowledge in many different fields. No less important than the growth of knowledge is its dissemination to those who will apply it. Thus the health of my people, as you have well said, Mr. Dean, depends in great measure on the training which the medical schools of to-day give to their students, who will be the doctors of to-morrow.

"The buildings and equipment of a medical school must keep pace with knowledge, and inevitably there comes a time when radical change is required. You are indeed fortunate that when your need for a new school arose those wise donors of whom you have spoken, and others also, gave generously of their substance and helped with their inspiration. I doubt not, Mr. Dean, that this new provision for medical education in London owes much also to your own well-informed and untiring labours.

"I am happy to declare the new building of St. Mary's Hospital Medical School open, and I pray that with God's blessing the beneficent work of the school, and the hospital with which it is associated, may prosper and extend."

The Bishop of London then offered a prayer, and a hymn was sung by the assembly. A number of presentations were made, including that of students' representatives, before the King and Queen proceeded on a tour of inspection of the buildings.



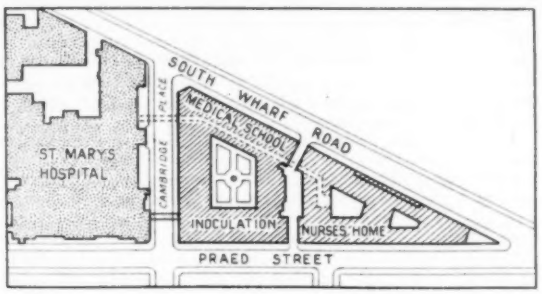
The library.

FACILITIES FOR WORK

The floors of the new medical school are not rigidly allocated each to a department; there is some overlapping, and the lecture theatres, though a rather smaller one on the top (fourth) floor is designated anatomy and the one on the third floor physiology, they will be

available also for other lectures. The top floor houses the anatomical department. The dissecting-room is spacious and well ventilated, and the research rooms for the professor, lecturers, and honorary workers well planned. The Henry Davis museum in this department contains one of the most complete embryological collections in the country. The beautiful enlarged coloured models of anatomical parts which have contributed to the popularity of this department among students are now housed in cases, where they can be studied from any angle.

Biology is also accommodated on this floor, while physiology takes up the third and part of the second floor. The main students' laboratory extends over a great part of the length of Cambridge-place, its benches running parallel with the windows. Pharmacology and physics are on the second floor and chemistry on the first. A large laboratory for




Plan showing the position of the new building which houses the medical school and the inoculation department of the Pathological Institute. The proposed nurses' home, not yet constructed, is also shown.

inorganic chemistry accommodates 60 students, separated from the smaller organic chemistry laboratory by doors which can be removed for occasions such as examinations when a very large practical laboratory is required.

Throughout the school the ceilings have been treated with felt to make the acoustic properties as perfect as possible, and the provision of window space is unusually generous.

### THE PATHOLOGICAL INSTITUTE

The pathological institute is directly continuous with the medical school and is fitted with every modern device. The large laboratories face north; those facing south are smaller, and are designed each to accommodate one or two workers only. There are two class-rooms for students, a very large lecture theatre, and a laboratory for senior students. The lower ground floor is an out-patient department designed solely for the use of patients having bacteriological treatment. In the library of the pathological institute is an admirable portrait of the director of the institute, Sir Almroth Wright, by Mr. Gerald Kelly, R.A. Those inspecting the laboratories after the opening ceremony were shown many ingenious bacteriological tricks, including pictures of flowers, flags, and even portraits, of which the bright colours were made up of bacterial cultures carefully and artistically delineated.

The animal room at the top of the building is panel-heated. There is nothing touching the floor, all the shelving for cages being slung from the ceiling so that the floor can be cleaned by a hose. All refuse is disposed of in an incinerator on the same floor. Outside each animal room a thermometer shows the temperature inside, and this can be regulated by turning a handle.

### FACILITIES FOR PLAY

The old medical school at St. Mary's dated from 1852. If the old buildings were more out of date than those of other schools, the new school is a little in advance of its time. It has, for example, an underground garage for 50 cars, capable of extension, as well as a swimming bath, a squash racquets court, and a gymnasium.

The swimming bath, 60 ft. by 27 ft., has an elaborate purifying system. Water is continually circulated through filters and through special valves in which ultra-violet ray lamps play upon the water as it passes through. No chlorine is used. Bacteriological tests of the water from time to time have apparently shown that the method is a great advance on the methods of the past, besides being much more pleasant for the bather.

On the same floor is a large students' dining-room, which, with the swimming bath, opens on what is to be a formal garden, is furnished, like the students' common room, in light oak with leather upholstery.

## IRELAND

(FROM OUR OWN CORRESPONDENT)

### DEATH OF PROF. JOLY

Dr. John Joly, F.R.S., Fellow of Trinity College, Dublin, and professor of geology in the University of Dublin, died on Dec. 8th, at the age of 76 Although not a member of the medical profession he had important relations with medical work. As a physicist he was specially interested in the early study of radium, and when radium began to be applied to therapeutic ends he gave himself up to the investigation of mechanical methods of application. In association with his friend, the late Walter Clegg Stevenson, a surgeon, he devised the method of enclosing radium emanation in sealed capillary glass tubes which could be inserted into hypodermic needles and introduced to the tissues. This "Dublin method," now practised throughout the world, is also used for the application of radium itself. It was largely owing to Joly's influence that the Royal Dublin Society purchased and borrowed a considerable stock of radium, the emanation from which is put at the disposal of medical men for therapeutic purposes. In this part of his work he took the keenest interest to the time of his death. He was a man of manifold activities, and he took the leading part during the last 30 years in the development of the science schools in Dublin University.

MINISTER OF HEALTH ON SLUM CLEARANCE.—Speaking at West Bromwich last Saturday Sir Hilton Young pointed out that each time had its specific task for the betterment of social conditions, and the specific task for the present time was to concentrate upon the slum evil. The hard core of the evil was the old house that is unfit for human habitation, that could not be made fit for habitation, and that must be cleared away. These were the houses which must be cleared away without compensation for the building, and could rightly be so treated without injustice to the owners. The most recent returns from local authorities showed that the number of such houses to be removed under their five-year programmes will exceed 210,000.

# MEDICAL NEWS

## University of Oxford

The appointment by the board of the faculty of medicine of Dr. K. J. Franklin, demonstrator in pharmacology, as dean of the medical school will be submitted for approval in a convocation to be held on Saturday, Dec. 16th.

Dr. A. G. Gibson, reader in morbid anatomy in the university, has been appointed clinical examiner in medicine in the second examination for the degree of bachelor of medicine.

At recent examinations the following candidates were successful :—

*Pathology.*—H. Burton, D. G. W. Clyne, R. H. B. Cridland, J. P. Dewsbury, W. E. Henley, D. H. Hertz, C. A. Hinds-Howell, C. Hollins, R. H. G. Lancashire, T. G. Lowden, R. McDonald, A. P. Meiklejohn, A. E. Palin, W. R. Trotter, G. M. Afoumado, and N. E. R. Archer.

*Pharmacology and Materia Medica.*—S. E. Furber, D. Kendall, T. W. Lloyd, A. R. Norton, A. H. M. Richards, K. C. Royes, B. B. Waddy, and J. M. Sherring.

*Forensic Medicine and Public Health.*—J. H. Bartlett, C. A. Boucher, P. E. Burgess, A. H. G. Campbell, J. P. Child, A. C. Cox, R. H. Gardiner, P. R. Greeves, C. F. Hamilton-Turner, A. H. Hunt, T. G. Lowden, J. E. G. Pearson, W. H. A. Picton, and E. Starling.

*Medicine, Surgery and Midwifery.*—J. A. Boycott, G. H. Buck, A. C. Cox, E. P. Edmonds, G. E. Godbex, M. S. Good, J. W. Litchfield, G. E. Scott, J. A. E. Scott, E. Starling, W. F. de C. Veale, and M. A. Jennings.

All those who have passed in medicine, surgery, and midwifery have completed all the examinations required for the degrees of B.M., B.Ch.

## University of Cambridge

Dr. F. C. Golding has been approved for the diploma in medical radiology and electrology.

## Society of Apothecaries

This society will hold examinations for its diploma of mastery of midwifery twice yearly, beginning on the third Mondays in May and November. The regulations may be had from the registrar of the society, Water-lane, London, E.C.4.

## University of Birmingham

Dr. J. F. D. Shrewsbury has been appointed reader in bacteriology and director of the public health laboratories, and Dr. E. Baylis Ash lecturer in the same subject and assistant bacteriologist in the laboratory. Dr. W. Carey Smallwood is to be university clinical teacher and assistant clinical lecturer in diseases of children.

## University of London

At a meeting of the Senate on Nov. 22nd the following examiners were appointed :—

*Medical degrees.*—Prof. H. A. Harris, Prof. H. H. Woollard, Prof. W. E. Le Gros Clark, Prof. T. B. Johnston, Prof. William Wright, Dr. Thomas Yeates, Prof. J. E. S. Frazer, and Prof. M. F. Lucas Keene in anatomy; Prof. E. B. Verney, Dr. Orlando Inchley, Dr. Philip Hamill, Dr. W. A. M. Smart, Dr. Nathan Mutch. Dr. V. J. Woolley, Prof. Samson Wright, and Prof. B. J. Collingwood in pharmacology; Prof. J. C. Drummond, Prof. C. A. Lovatt Evans, Prof. J. P. Hill, Prof. Hamilton Hartridge, Prof. D. T. Harris, Dr. G. W. de P. Nicholson, Mr. W. R. Spurrell, Prof. John Mellanby, Prof. B. J. Collingwood, Prof. E. C. Dodds, Mr. J. H. Woodger, Prof. Samson Wright, Prof. Winifred Cullis, and (on recognition) Dr. W. H. Newton in physiology.

*Dental degrees.*—Prof. Le Gros Clark and Dr. Yeates in anatomy; Prof. R. H. S. McDowall, and Mr. W. R. Spurrell in physiology; Mr. A. G. Allen and Mr. J. B. Milne in prosthetic dentistry; Mr. Evelyn Sprawson and Mr. H. C. Malleson in special anatomy, special physiology, and dental histology; Dr. R. A. Rowlands and Dr. C. E. Newman in medicine; Mr. G. E. Neligan and Mr. E. C. Hughes in surgery; Mr. Frank Coleman and Dr. Hamill in pharmacology; Prof. A. E. Boycott and Prof. James McIntosh in pathology and bacteriology; Mr. Sprawson and Mr. E. B. Dowsett in dental surgery and operative dental surgery; Mr. F. B. Bull and Mr. George Northcroft in orthodontics.

*Diploma in Public Health.*—Prof. M. E. Delafield, Prof. W. W. C. Topley, Prof. C. C. Okell, and Prof. H. B. Maitland in Part I.; Prof. Major Greenwood, Prof. W. W. Jameson, Dr. Thomas Carnwath and Dr. Alexander Joe in Part II.; Dr. Joe in hospital administration and the clinical aspects of infectious diseases.

At a meeting of the court held on Dec. 6th it was announced that the Middlesex county council had voted a grant of £100,000, payable over ten years, towards the new buildings on the Bloomsbury site. A condition of the grant is that the new central library shall be associated with the name of Middlesex.

## University of Sheffield

Dr. B. D. Pullinger has been appointed a demonstrator in pathology.

## University of Durham

The Chancellor of the University has appointed Sir Robert Bolam, F.R.C.P., to be a pro-vice-chancellor for two years from Feb. 6th, 1934.

## University of Bristol

At recent examinations the following candidates were successful :—

FINAL EXAMINATION FOR M.B., CH.B.

*Part I.*—V. T. Baxter, Kathleen G. Brimelow, F. C. Collingwood, Theodora M. Crabtree, J. G. Field, P. N. Heron, A. E. Jowett, S. D. Loxton, and A. W. Woolley.

*Part II.*—S. B. Adams and Frances E. Powell (group II. completing the examination).

## London (Royal Free Hospital) School of Medicine for Women

This year Mr. Gay French presided at the annual dinner, held at the Savoy Hotel, on Dec. 7th. The toast list was short, to give opportunity for dancing later, and the gathering was as usual well attended by past and present students and their friends.

The hon. Mrs. Alfred Lyttelton, G.B.E., proposed the toast of the School and Hospital. Commenting on changing fashions in therapeutics, she recalled a childhood marred by castor oil and rhubarb. What did not change was the need for a doctor to study the psychology of each patient. Whereas one suffering from civil war within was content with the assurance that he had indigestion, his stomach being out of order, another preferred to be told that in the chemical laboratory which dealt with ingested foodstuffs there was a hypochlorhydria. She begged doctors to remember what a strong impression their manner was liable to leave on their patients, irrespective of the actual words spoken. The Chairman, in reply, said that the woman's movement had reached a stage where it was no longer necessary to recall the past, but more appropriate to dwell on the present and future. He wished, however, to note some of the changes which had taken place at the Royal Free Hospital since he had joined it in 1911. He gave figures showing the immense growth in the number of beds and students; the consulting staff which had numbered 14 in 1911 now numbered 27. In his own department for ear, nose, and throat, the out-patients had risen from perhaps 2 new and 4 old cases to an annual attendance of over 7000, and whereas he had formerly had the option of one bed, now 32 beds were at the disposal of the honorary staff of the department, who now numbered three. Turning to the news of the year, he referred to the appointment of Prof. R. A. Webb to the chair of pathology on the return of Prof. Geoffrey Hadfield to Bristol, and to the new accommodation for the pathology department in the building of the Eastman Dental Clinic and for nurses in the Langdon Riddell Home. Future developments would include the increase of private wards from 10 to 23, and, eventually, the erection of five more floors to the Albert Levy wing, to be used for a gynæcology department and for residents' quarters.

Dr. L. S. T. Burrell proposed the principal guests by name, making graceful allusions to the qualities of each and welcoming the rest with great cordiality. Dr. F. M. R. Walshe, in response, felt it unnecessary to praise the members of the staff of the London School of Medicine for Women, since doubtless they were informed by the same healthy spirit of mutual admiration as were all other medical schools excepting, of course, his own. His advice to those contemplating consulting practice was based on that received by him from a senior colleague. Of the three ways which might lead to success the first —to attempt to get a reputation by research—was not to be recommended, on the grounds that the general practitioner does not like scientists and that a thirst for knowledge and a good bedside manner do not go together. As an alternative the social line might be tried, with an open house and a good table, but this was expensive

and exhausting. The third method had been followed by his mentor, who had written a text-book which went into five editions. All that was needed was the use of a good library and some scissors and paste. To those who, like the speaker, arrived in the field too late for this procedure, there remained only the hollow and far from lucrative revenge of a disappointed man—to review the text-books of others. Dr. Walshe therefore advised young consultants to write text-books and do it quickly before clinical experience had vitiated their fluency. Lady Galway also replied for the guests. She spoke of common sense as the common denominator between women doctors and women educated for other work. She ventured to suggest that a problem which she understood was causing anxiety at the moment, that of the medical curriculum, would greatly benefit by the application of common sense to its solution.

Dr. Helen Boyle proposed the Chairman, praising Mr. Gay French not only for his professional skill but for his loyalty and helpfulness to old students of the school; in reply, Mr. French was proud to say that a substantial part of his post-bag was made up of communications from old students seeking his coöperation and advice.

### Royal National Orthopædic Hospital

The Duke of Gloucester, president of the hospital, took the chair at a festival dinner held at the Dorchester Hotel on Dec. 6th, and proposed the toast of the hospital. He referred to the magnificent work of Mr. Herbert West, a former chairman of the hospital, and said that about £60,000 a year must be raised to maintain over 450 beds. There was a debt of nearly £35,000, and the demand for treatment seemed to grow ever more insistent. About 30 clinics had been established in coöperation with local authorities and medical officers of health, so that the services of the hospital might be brought as near as possible to the homes of the children. The work meant not only the cure of deformities, but transformation in the whole outlook of the cripple. No work could be more worth while, and it must not be cramped by temporary depression. He coupled with the toast the name of Lord Denbigh, a vice-president, and previously for many years chairman of the hospital.

Lord Horder proposed the health of the guests, and said that if an institution was to be known by its friends the Royal National Orthopædic Hospital was of good repute. While there was no best general hospital, all agreed that the premier hospital in orthopædic surgery was the Royal National. In this branch of surgery there was at the moment an urgent demand for a lower standard of work—whether it be called manipulative surgery or osteopathy or chiropractic or, as an outsize visiting card left on him recently had put it, "anatomy adjustment." The human hand was a wonderful instrument, and dramatic results occasionally followed its use with no brain behind it, but the human brain was also a wonderful instrument, and the two working together were best for the patient who needed diagnosis first and treatment afterwards. He hoped that there was still a small section of the public who required pathology as well as therapeutics.

Lord Burleigh replied for the guests, and the health of the President was proposed by Sir William Coxen, who had himself been a patient at the hospital. Donations amounting to over £3000 were promised at the dinner.

### Medico-Legal Society

The annual dinner of this society was held at the Holborn Restaurant on Dec. 8th, Sir Bernard Spilsbury presiding. After the loyal toasts had been honoured, Lord Atkin, a past-president, proposed "Medicine and Law." He remarked that in America a notable medical contribution to justice was a drug under the influence of which witnesses and prisoners could not help telling the truth. He suggested its use on expert witnesses in this country—with the exception of their chairman. The inter-relation of medicine and the law grew closer every year, and the time was ripe for an efficient medico-legal institute in London. Staffed by men with an international reputation it would attract students from all countries.—Lord Dawson, in reply, said that lawyers had many things to teach medical men, especially about holidays. He quoted Bacon's words, written just before a long vacation, as one of the best definitions he had heard of expectant treatment: "carrying things in suspense and without prejudice until they resolve."—Sir R. Graham Campbell, also in reply, praised the work of the divisional surgeons of the metropolitan police, who did so much to help the magistrate even though they were unassisted by Lord Horder in the discharge of their midnight duties. The tie between the two professions was, he said, being strengthened by new ideas on the treatment of the criminal and the growing consciousness that crime was connected with mental and physical illness.

Lord Atkin, proposing "The Society" in the place of Lord Horder, praised its officers and past-presidents for their devoted work. The new transactions with their abstracts from foreign literature, were, he said, a most valuable contribution to science.—Sir Bernard Spilsbury, in reply, said that the Society had been founded towards the end of 1901 and had at first discussed the classical subjects of medical jurisprudence, such as post-mortem examinations and impulsive insanity. Its scope had widened enormously during recent years, and papers had been read on numerous topics such as the blood-groups, X rays, and the legal significance of shock, which would never have been contemplated in the early days of the society.

Lord Riddell proposed "The Guests." Members of the newspaper trade, he said, like lawyers and doctors, regarded the discovery of truth as their chief objective. They were, however, in the unfortunate position that if they made a mistake they had to pay for it.—Sir Holburt Waring, in reply, suggested that London had too many undergraduate and too few post-graduate medical schools. A medico-legal institute should not be associated with either, but should be housed in a properly-equipped building of its own in Bloomsbury, near or on the University site.—Mr. H. C. Dickens also replied.

### British Nurses Overseas

The achievements and difficulties of British nurses working in the colonies were described at the Royal Empire Society at the Hotel Victoria on Dec. 5th by Lady (Samuel) Wilson. The Overseas Nursing Association, she said, was started in 1896, and besides selecting nurses for the Government services, the Association provides a number of nurses for municipal and private nursing-homes and hospitals used by the British communities in various parts of the world, both within and without the Empire. It not only supplied the nurses, but also helped nurses who come home invalided and have to take a rest or undergo some special treatment. The association have an executive committee over which Lord Athlone presides, but the actual selection of the nurse is left to a committee consisting of women who know the Colonies intimately and two matrons. The association keeps in touch with the nurses appointed, not only to know how each is faring, but also to ascertain whether she can properly be recommended for further employment. Lady Wilson expressed her conviction of the value of the influence which the right type of women could exert in the scattered lands where they work, sometimes a hundred miles from the nearest doctor. Mr. J. L. Gilks, director of medical and sanitary services, Kenya, said that he welcomed the opportunity of acknowledging the indebtedness of East Africa to the Overseas Nursing Association. Her duties and responsibilities were manifold. First, like other Government officers, she had to pass an examination in Swahili, for insufficient knowledge of the vernacular language was a fruitful source of difficulties and misunderstandings. In addition to work in European hospitals nursing sisters were posted to Indian and native hospitals, the duties here being concerned largely with supervision and teaching of the native staff of dressers and orderlies. The high degree of efficiency reached by native workers was a tribute to the patience and devotion of the nursing sisters who were responsible for their training. The work of nurses in connexion with clinics for women and children and with health visiting was of the utmost value. The scope for nursing sisters of the right type was widening.

Miss R. Darbyshire and Miss McManus, the matrons respectively of University College and Guy's Hospitals, spoke of nursing work in India and Egypt.

### Royal Microscopical Society

At a meeting of this society, to be held at B.M.A. House, Tavistock-square, London, W.C., at 5 for 5.30 p.m. on Wednesday, Dec. 20th, Dr. J. N. McArthur will read a paper on a new type of portable microscope. Other communications will be made.

### The Poisons Board

At its inaugural meeting held on Dec. 7th, Mr. M. D. Perrins was appointed secretary. Communications should be addressed to him at the Home Office, Whitehall, London, S.W.1.

### Demonstration of Spa Methods

A demonstration of hydrological treatment, given at the hot mineral baths of Bath on Dec. 6th, was attended by many medical men from Somerset, Gloucester, and Wiltshire. Methods of treatment by the hyperthermal water, various kinds of douche massage, the recently installed thermal vapour treatment—a method lately devised by Bath and only obtainable there—and other forms of treatments were demonstrated. Dr. Vincent Coates, Dr. A. Gordon Watson, Dr. G. R. P. Aldred-Brown, and Dr. J. B. Bennett, physicians of the Royal Mineral Water Hospital, conducted the parties of guests, and Dr. F. G. Thomson, consulting physician to the hospital, gave an address on the physiological principles of hydrological treatment.

### Queen's Institute of District Nursing

At a meeting of the council last week a number of badges were presented in recognition of 21 years' "satisfactory and loyal service" under the institute. It was reported that 27 nursing associations have been affiliated since the last meeting of the council, and that 260 nurses have been enrolled as Queen's nurses. Inspections have been made of 639 of the districts in England and Wales employing 1238 nurses. The large majority of these reports show that very good work is being done; a high standard of work is also shown in the reports on the county nursing associations. It was stated that the National Gardens Scheme has been the means of raising over £11,000 to help district nursing.

### Litigation about Hospital Legacies

The late Mrs. Ludlow-Bruges who resided in Jersey and died there in July, 1932, devised her real property in Jersey together with the residue of her estate to Melksham Cottage Hospital, with a proviso that if it was unable to take the realty it should pass to the Royal Hospital and Home for Incurables, Putney, which is incorporated by Royal Charter. The will was contested on the ground that since the Melksham Cottage Hospital is not incorporated it had no legal claim to hold property in Jersey. Last week the Royal Court of Jersey upheld this contention, and the real estate will therefore go to the Putney Hospital. This decision does not affect the residue of the estate, which will fall to the Melksham Hospital. The solicitor to the trustees of that institution states that the legacy "may possibly be in the region of £100,000." The hon. treasurer of the Hospital for Incurables thinks that the value of the real property is unlikely to exceed £3400.

### The Insulin Inquiry

The Board of Trade tribunal has acceded to the application made by the Association of British Chemical Manufacturers to place insulin and its salts on the list of articles dutiable under the Safeguarding of Industries Act. The tribunal consisted of Prof. F. G. Donnan, F.R.S., Prof. Samuel Smiles, F.R.S., and Mr. Henn Collins, K.C., acting as referee. Conflicting evidence was given at the inquiry as to whether insulin can properly be described as a fine chemical, and the representative of the Board of Trade said the Board must be satisfied this was so before insulin and its salts could be placed on the list. A majority of the members of the tribunal have now decided this question in the affirmative, and the decision is to take effect from Dec. 14th. It should be recalled that at the inquiry counsel gave an assurance on behalf of British chemical manufacturers that they had no intention of raising the price of insulin if the duty were imposed.

### Sale of "Christmas Seals"

A scheme has been organised this year under the auspices of the National Association for the Prevention of Tuberculosis for the sale of Christmas seals in aid of the work of the association. Though the idea has already proved successful in many other countries this is the first time it has been tried in this country. The seals cost 4*s*. for a sheet of 100, but smaller quantities may also be obtained. They may be ordered from the association (Tavistock House North, Tavistock-square, London, W.C.1), or from the societies affiliated to it.

### Memorial to Lord Knutsford

Last week a commemorative tablet to the late Lord Knutsford was unveiled at the London Hospital by Sir William Goschen, his successor in the chairmanship which he held for 35 years. The tablet and supporting pillars form the top and lintels of the entrance doors to the main hall. They are of polished Portland stone and were designed, as a gift to the hospital, by Sir Edwin Lutyens.

### Memorial to the late Dr. Percy Hughes

A fund has been opened by the staff of the Worcestershire Mental Hospital with the object of erecting a memorial to the late Dr. Percy Theodore Hughes, medical superintendent of the hospital from 1906–33, and lecturer on mental diseases in the University of Birmingham. Those who wish to contribute should send their donations to the hon. treasurer, Mr. W. M. J. Coleman, Clerk's Office, Barnsley Hall Mental Hospital, Bromsgrove, Worcestershire, before Jan. 15th.

### Sheffield Medical Sciences Club

On Dec. 9th this research club held a joint meeting with the Leeds Pathological Club and Manchester Medical Sciences Colloquium. The meeting took place at the University of Sheffield, Prof. G. A. Clark, dean of the medical faculty, presiding. In the early afternoon demonstrations were given in the bacteriology and pathology department by Prof. J. W. Edington, Dr. C. G. Paine, Prof. H. W. Florey, Dr. H. E. Harding, Dr. L. C. D. Hermitte, Dr. Margaret Pownall, and Prof. A. E. Naish; in the physiology department by Prof. Clark, Dr. C. G. Imrie, Dr. Elizabeth Eaves, Mr. J. G. Boswell, Dr. H. N. Green, and Prof. E. Mellanby; and in the anatomy department by Prof. C. J. Patten and Dr. M. A. MacConaill. After tea the following papers were read: Mrs. May Mellanby on the relationship between vitamin A and D deficiencies in puppies and caries and pyorrhœa in man; Dr. A. D. Ritchie on the rôle of lactic acid in muscular contraction; Prof. A. J. Hall on Bell's phenomenon; and Dr. E. A. Underwood on the use of potent formol toxoids in immunisation against diphtheria. Nearly a hundred members and visitors attended.

### King Edward's Hospital Fund

At a meeting of the general council of this fund on Tuesday last, the Prince of Wales, as president, announced that this year the sum of £300,000 would again be distributed, though it was uncertain whether the available income would reach this total. The distribution was last year increased by £25,000 to meet the difficulties of hospitals during the economic crisis, and this increase is being maintained. Pointing out that few hospitals were in serious difficulties the Prince said: "That an annual expenditure of over £3,000,000, in London alone, should continue to be met year after year in these hard times, reflects the greatest possible credit both on the hospitals for the efforts they have made to meet the crisis, and on the public, including the patients themselves, who have responded so nobly. I think it is one of the most encouraging signs in the progress of our hospital administration that patients' payments in 1932, including £340,000 from the Hospital Saving Association, came to £1,139,000."

Among those present were Sir John Rose Bradford, Sir Cuthbert Wallace, Sir William Collins, Sir Cooper Perry, Mr. H. L. Eason, Dr. Morley Fletcher, Mr. Eardley Holland, and Dr. Gilbert Orme.

# PARLIAMENTARY INTELLIGENCE

## NOTES ON CURRENT TOPICS

### Unemployment Bill

IN the House of Commons on Dec. 5th the debate was resumed on the Labour Party's amendment to the motion for the second reading of the Unemployment Bill. The amendment was in the following terms:

"That this House declines to assent to the second reading of an Unemployment Bill which fails to recognise that all the victims of the unemployment which is inherent in the modern system of industrial capitalism are entitled to equal and honourable treatment and maintenance from national funds so as to preserve intact their value to and status in the community."

#### INSURED PERSONS THROWN ON PUBLIC ASSISTANCE

Sir FRANCIS FREMANTLE said that the Bill contained one of the finest schemes for unemployment insurance which this or any other country had yet had. There was, however, a very definite plan in it, for the able-bodied unemployed would come under the poor-law assistance authority for medical relief. Men who through the whole course of their employment had been looked after medically by their panel doctors would now have to leave them for district medical officers who were paid a fixed sum whether they had 20 or 100 or 500 extra patients. Instead of having the choice of 16,000 panel doctors and of 10,000 chemist shops, the able-bodied unemployed man was to be put under a system which employed 3500 district medical officers, each of whom looked after an average population of 15,000 extending over 15,000 acres. The system of the district medical officer was grossly inefficient in general ways and unfair both to the patient and to the doctor. The district medical officer could seldom prescribe extras, never district nursing, although some boards subscribed to the local district nursing associations. He made no returns. He had rarely a superior officer to advise and to encourage him. He had no relationship to the medical officer of health and no incentive to advise, to prevent illness, or to report unhealthy conditions. His business was to supply medical relief which was too often limited to the giving of a bottle of medicine. The friendly relations which existed between doctor and patient were now to be broken. The Minister of Health had said it was perfectly open to the local authority to make use of the panel system for its public assistance organisation. Experiments had been made in that direction in Newcastle-on-Tyne, East Ham, and Wiltshire. But the Government must see this matter as a whole. The Bill threw these people on to the poor-law for medical relief. Doctors were clearly against it.

#### INCREASE IN MALNUTRITION

Dr. SALTER said the Bill did nothing whatever to remedy the terrible privations from which hundreds of thousands of unemployed people suffered. Not only were the 1931 cuts in unemployment benefit not restored by the Bill, but as he read the measure they were to be stereotyped and made practically permanent.

Mr. HUDSON, Parliamentary Secretary to the Ministry of Labour, indicated dissent.

Dr. SALTER said it was true that there was a vague possibility that at some remote period in the future the board might recommend an increase in benefit. But surely the fact that the first call on the Unemployment Fund was for reimbursing the Treasury for money expended in the past practically negatived any chance of any available surplus being allocated for increase of benefit. An enormous mass of evidence had been accumulated recently to show that the rates of benefit were totally insufficient to sustain life, or, in the words of the British Medical Association Committee, "to maintain health or working capacity." The Minister of Health had said that there was no evidence of any increase in malnutrition among elementary school-children in industrial districts. He could not have read the reports of their own medical officers of health:

"There is no doubt that large numbers of children are carrying on in this country without adequate food. The money available for food in many homes is not sufficient to buy an adequate diet for a growing child, even on the plainest and simplest lines."—(M.O.H., Cumberland.)

"The general health of the children showed uniform decline in the last quarter of the year, the unprecedented trade depression and consequent unemployment being the direct cause. . . . No one can deny that the ex-baby and the toddler were both definitely much less robust and much more in need of medical attention and much more prone to rickets than was the case two years ago." (M.O.H., Preston.)

"In the present state of unemployment children are getting too much starchy food and too little fresh fruit, fresh milk, fresh vegetables, and fresh eggs."—(M.O.H., Burnley.)

Reporting on rickets, which had gravely increased throughout the country: "It would seem that the prolonged industrial depression is having its grave effect on the mothers."—(M.O.H., Monmouthshire.)

Dr. SALTER went on to quote similar statements in support of his view by the medical officers of health for Cardiff, Blackburn, Stockton-on-Tees, Glasgow, and Hammersmith.

Sir F. FREMANTLE asked the hon. Member to read the favourable reports, and asked if there were not three times as many on the other side.

Dr. SALTER said he had quoted extracts which demonstrated conclusively his assertion that malnutrition was very widely prevalent at the present time among children.

Sir F. FREMANTLE: What does Sir George Newman say?

Dr. SALTER said he had given concrete evidence not from politicians but from unbiased persons who had to administer the Public Health Act. It was well known that young children, who were not properly fed, who were not getting sufficient calories, could actually put on weight and yet get every day nearer to death's door.

Dr. O'DONOVAN: No one will dispute the statement about fatness and want of health, but is not "at death's door" a little rhetorical?

Dr. SALTER said that children with extreme rickets, who were bloated and overweight, would be seriously affected by a slight disease which an ordinary child would throw off in a day or two.

Dr. O'DONOVAN: I agree.

Dr. SALTER: Chronic semi-starvation of the proper foods affected the brain functions and the brain structure, and this insufficient feeding which was going on produced the sluggishness of the brain, the inertia, and the incapacity of effort, and was really the cause of what was described as a loss of morale. The report of the B.M.A. committee on nutrition said: "The minimum required to maintain a man in health and efficiency is 5*s.* 10½*d.* a week." That was really an under-statement because the cost of a pint of milk was assumed to be 2½*d.* in summer and 3*d.* in winter, but actually milk could not be obtained under 3½*d.* a pint. Many of the ingredients of the diet set out in the report could not be purchased, in London at any rate, at the prices mentioned. The report stated: "It has not been found possible to prepare any diet for a child at a less cost than 2*s.* 6*d.* per week." Yet only 2*s.* was actually allowed, and this Bill proposed to perpetuate that allowance. The Ministry of Health had published its own report in which it was stated:

"For the proper feeding of children in poor-law institutions, in homes containing 200 children, the weekly cost of food is 4*s.* 6½*d.* per head, if all provisions are bought at contract prices."

How could the unemployed buy food at contract prices? How could a man with a wife and three

children between the ages of 6 and 14 spend £1 3*s*. 1½*d*. on food out of a total payment of £1 9*s*. 3*d*. when the rent would be 10*s*. or 12*s*. at least, and no allowance was made for renewals of clothing and fue? Since the B.M.A. report was published there had been letters in the press from medical men and others pointing out that even the B.M.A. ration was only barely sufficient to maintain life at a level of subsistence.

GOVERNMENT REPLY

Mr. HUDSON, replying to the debate, said the Bill added one more storey to the edifice which this country provided for the recognition of its debt towards the less fortunate of its fellow citizens. It was a recognition of a problem, the cost of which had risen from £30,000,000 in 1900 to £490,000,000 last year. The Bill contained provisions which were not surpassed, and were not even equalled, in any other country in the world.

The Labour amendment was rejected by 435 votes to 81.

RELIEF FOR DISTRESSED AREAS

On Dec. 11th the House considered in Committee the money resolution in connexion with the Unemployment Bill. In the course of the debate Mr. CHAMBERLAIN, Chancellor of the Exechequer, dealing with suggestions which had been made by hon. Members that insufficient relief was being given to the distressed areas, said that those areas which had the highest cost obviously would get a bigger amount of relief than those which had a lower cost. It was quite true that the distressed areas would still be left with more to bear. This measure, however, was not an Equalisation of Rates Bill. It was not possible or desirable to try to equalise rates throughout the country, and certainly not at the expense of the taxpayer. But in the weighting of the block grant the distressed areas had been specially favoured, and by the arrangement in the Bill they would in fact get a larger amount of relief expressed in pounds than would be obtained by the areas which had not the same burden to bear. He did not think that there was a very strong case for doing anything more than was in the Bill, but at the same time he did recognise that in some of the areas which were called distressed the distress had lasted for a good many years and that in those areas there was a feeling that they were being driven really harder than they ought to be and that not sufficient recognition was made of their special circumstances. In so far as the grievance arose out of the faulty distribution of the block grant, that had to be a matter for investigation before 1937 when the grant was reviewed. But in order to help a little bit during the intervening period—he recognised that three and a half years might be thought rather a long time to wait—he would be prepared to deduct from the cost as ascertained in the standard year of the transferred expenditure the amount of the special provisional grant which would be given to distressed areas this year—deduct that from the standard cost and let the 60 per cent. contribution be on the reduced amount instead of on the gross amount. That would mean, as far as he could tell, somewhere about another £300,000 to be distributed to the distressed areas. It was not possible for him now to make an amendment in the financial resolution which would carry out this new proposal, but the Government would put down an amended resolution which would come before the House at a later stage.

### Licensing Hours

In the House of Commons on Friday, Dec. 8th, Mr. J. C. LOCKWOOD moved the second reading of the Licensing (Standardisation of Hours) Bill. He said that the object of the measure was to do away with some of the extraordinary anomalies which had arisen under the Licensing Act, 1921. The Bill proposed that the hours in licensed houses and clubs should be, in the metropolitan area and in boroughs and urban districts with populations exceeding 20,000, from 11 o'clock till 3, with a two-hour break from 3 to 5, and that the closing hour should be 11 P.M. In the other districts it was proposed that the closing hour should be 10.30 P.M. The criticism would probably be made that the result of the Bill would be to increase drunkenness. If he thought that was true he would withdraw the Bill; but he did not believe that an additional opening hour would have that affect. It was true that the Bill was contrary to the recommendations of the Royal Commission, but although the report of that Commission was very valuable it did not necessarily represent the opinion of the country, and in any case the final decision lay with the House of Commons. The Bill would take away some of the existing powers of licensing justices, but their powers to grant extensions and special licences would remain.

Dr. SALTER moved the rejection of the Bill. He said that the promoters had shown remarkable audacity in bringing it forward in spite of the strong recommendation of the Royal Commission that the question should not be dealt with piecemeal, and in face of the opinion expressed by representatives of the Government that this matter was one that should be dealt with by the Government. The Commission recognised that there was no genuine public demand for an alteration of licensing hours and that the restrictions were definitely beneficial. The injustices and anomalies created by the Bill would be far greater than those which might be swept away.

Mr. HACKING, Under-Secretary, Home Office, said that the Bill did not apply to Sundays, and it was perhaps a little inconsistent to take away most of the powers of the licensing justices in respect of weekdays and to leave them their existing authority so far as Sunday was concerned. The Royal Commission was unable to find any evidence of a widespread wish for a relaxation of the existing system, and only two Members signed the report against that proposition. The Government had not yet been able to take into full consideration the recommendations of the Royal Commission and were therefore not prepared themselves to propose legislation at the present time. The Government could not be expected to support a Bill which cut right across one of the main proposals in the report of the Royal Commission, which had not yet received at their hands the full and complete consideration which it deserved.

The Bill was read a second time by 101 votes to 67. A motion to commit the Bill to a Committee of the whole House was defeated by 89 votes to 51 and the Bill will therefore go to a Standing Committee.

### Protection of Dogs Bill

The Protection of Dogs Bill, a measure "to prohibit the vivisection of dogs," was presented in the House of Commons on Wednesday, Dec. 6th, by Mr. J. LOCKWOOD. The Bill was read a first time.

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## HOUSE OF COMMONS

WEDNESDAY, DEC. 6TH

### Flavouring Essences and Alcoholic Content

Dr. SALTER asked the Chancellor of the Exchequer if he was aware that at Messrs. Woolworth's stores in different towns throughout the country bottles of rum, brandy, and other flavouring essences, intended for human consumption, were being sold to the general public over the counter; that each bottle contained 10 c.cm., or one-third of an ounce, of a so-called flavouring agent; that this agent was composed of 90 per cent. of ethyl alcohol; that the bottles could be obtained by any customer in unlimited quantities; and if he was satisfied that an excise licence for the sale of intoxicating liquor was taken out in all these cases.—Mr. HORE-BELISHA (Financial Secretary to the Treasury) replied: I am aware that certain flavouring essences are on sale to the public by the firm mentioned and that the volume of the contents of the bottles is approximately as stated in the second

part of the question. I am informed, however, that analysis shows that these essences do not contain any ethyl alcohol. The question of an excise licence for their sale therefore does not arise.

Dr. SALTER: Is the Financial Secretary aware that certificates of certified analysts have been published in the press saying that they do contain 90 per cent. of ethyl alcohol as well as other essences?

Mr. HORE-BELISHA: I do not know who the analysts are to whom the hon. gentleman refers, but we have had an analysis made in the Government laboratory and these essences contain only iso-propyl alcohol. The hon. gentleman will be consoled to know that iso-propyl alcohol is deficient in intoxicating properties. (Laughter.)

Dr. SALTER: I am not prepared to accept the hon. gentleman's statement.

### Excessive Noise from Motor Vehicles

Sir WILLIAM BRASS asked the Minister of Transport whether, in view of the continuance of excessive noise from the exhausts of motor bicycles and sports cars in spite of the provisions of the Road Traffic Act, he would consider giving instructions to his commissioners in various districts to inspect all types of such cars and motor bicycles at the factories in order to make certain that these machines did not contravene Regulation 16 of the Motor Vehicles (Construction and Use) Regulation, 1931, before they were delivered to the public.—Mr. OLIVER STANLEY replied: Neither the traffic commissioners nor the certifying officers appointed under the Road Traffic Act have any powers in relation to ordinary motor cars or motor cycles, and it is not competent to me to issue instructions of the nature suggested by my hon. friend. I am, however, in communication with the manufacturers on this subject.

THURSDAY, DEC. 7TH

### Housing

Dr. HOWITT asked the Minister of Health the estimated number of houses in England and Wales at the present time per 1000 of the population and, for comparison, the corresponding figure in 1929 and in 1913, respectively.—Sir HILTON YOUNG replied: The estimated numbers are 245·8, 230·8, and 215·6.

### Rural Water-supplies

Mr. HALL CAINE asked the Minister of Health if he could give any indication as to the conditions which would qualify local authorities to apply for assistance from the Government grant set aside for the improvement of rural water-supplies.—Sir HILTON YOUNG replied: A Bill to authorise the grant will be introduced shortly. It is intended that grants will be made in aid of approved schemes of rural water-supply where the cost, after allowing for fair contributions from county councils and rural district councils, and the income from proper charges on water consumers, would involve a deficiency-rate on the parish greater than the parish could reasonably be expected to bear.

### Motorists and Accident Insurance

Mr. MANDER asked the Minister of Transport if he would consider the advisability, with a view to the prevention of accidents, of proposing legislation making it impossible for the driver of a motor car to insure himself against the consequences of any accident amounting to less than £10.—Lieut-Colonel HEADLAM (Parliamentary Secretary to the Ministry of Transport) replied: My hon. friend has already given careful consideration to a somewhat similar proposal and has reached the conclusion that an uninsurable risk up to a sum of £10, as suggested by the hon. Member, would be equivalent in many cases to depriving the injured person of the compensation due to him. I do not think, therefore, that amending legislation on these lines is desirable.

### Irish Free State People in Scotland

Captain RAMSAY asked the Secretary of State for Scotland how many persons born in the Irish Free State were at present resident in Scotland, and how many of these persons were in receipt of poor relief.—Sir GODFREY COLLINS replied: At the time of the 1931 census 54,854 persons born in the Irish Free State were resident in Scotland. There were also 874 persons who were born in Ireland but in whose case there is not sufficient information to say whether the birthplace was in the Irish Free State or in Northern Ireland. Exact information regarding the latter part of the question is not available, but on May 15th, 1933, 13,678 Irish-born persons, including dependants but not including able-bodied poor, were chargeable to Scottish poor-law funds.

### Juvenile Employment

Mr. RHYS DAVIES asked the Home Secretary when the Bill to cover the conditions of young persons in unregulated trades would be introduced.—Sir J. GILMOUR replied: I assume that the hon. Member refers to the prospective Bill to regulate further the hours of young persons employed in the distributive trades. I hope to be in a position to introduce this Bill early in the New Year.

MONDAY, DEC. 11TH

### The Price of Insulin

Mr. GEORGE HALL asked the President of the Board of Trade why the import duty on insulin had been increased from 10 per cent. to 33⅓ per cent.; and what would be the effect of this upon the price of imported insulin.

Mr. DAVID GRENFELL asked the President of the Board of Trade the amount of insulin imported into this country during the last convenient nine months; what was the world price at the beginning and the end of the selected period; what was the price of British insulin at corresponding periods; and whether, in increasing the import duty from 10 per cent. to 33⅓ per cent., consideration had been given to the additional cost that would have to be met by hospitals and sufferers from diseases for which insulin formed the basis of cure.—Dr. BURGIN (Parliamentary Secretary to the Board of Trade) replied: A tribunal constituted under the Safeguarding of Industries Act, 1921, as amended by the Finance Act, 1926, has recently decided that insulin and its salts fall within one of the general descriptions of goods scheduled as liable to duty under that Act. Insulin, therefore, now becomes subject to the Key Industry Duty of 33⅓ per cent. ad valorem. No statistics of imports or of world prices of insulin are available, but I am informed that for some time past the retail price of insulin from one maker in this country has been 1*s.* 8*d.* per 100 units and from the other makers 2*s.* per 100 units. An undertaking has been given on behalf of the British makers that their prices will not be raised as a result of the new duty, and my right hon. friend, the Minister of Health, has the question of the price of insulin very much in mind and proposes to watch the position closely.

Sir P. HARRIS: Does the hon. gentleman realise that this drug is vital for certain diseases, especially diabetes, that at present it is quite outside the reach of thousands of poor people and that the price ought to be very much lower if full advantage is to be taken of its remedial powers? (Hear hear.)

Mr. D. R. GRENFELL: Is there any possibility that any advantage accruing to the producers will compensate for the disadvantage to public health generally by the retention of a high price for this very valuable medical substance?

Dr. BURGIN: The whole question of insulin and its salts is, of course, receiving very careful consideration. A tribunal, deciding a purely legal question: Is this, or is this not, a fine chemical? has given a decision. The result is that a duty is automatically applied under the provisions of legislation going back to 1921. Obviously an opportunity must be given to consider the effects of that decision, but the undertaking that the price shall not be increased is a step in the right direction. Whether the price can be reduced is a matter that must be considered further and it shall be so considered.

Mr. GRENFELL: Will the hon. gentleman promise the House that he will report on these considerations at a convenient date in the future?

Dr. BURGIN: I will convey that suggestion to the President of the Board of Trade.

Sir J. HASLAM: May we take it that the present Government are not responsible for this duty, as insinuated by certain interested people in the press? (Cries of "Oh.")

Dr. BURGIN: That clearly results from what I have said. It was an Act of Parliament of 1921.

Sir F. FREMANTLE: Is there any assurance that there

is a sufficient supply in quantity from the British manufacturers ?

Dr. BURGIN : We have no assurance but we have no reason to think that that is not the case.

Sir H. SAMUEL : Because this dates back to 1921, why should it be altered now in the absence of fresh legislation ?

Dr. BURGIN : That is a provision of an Act of Parliament. Under the Act of Parliament an interested party can apply to the committee for a decision. An interested party has applied to the committee and a decision has been given. The position must be reviewed in the light of that decision. I have told the House quite frankly that the position is being clearly borne in mind.

### Petrol Fumes and Public Health

Mr. MCENTEE asked the Minister of Transport whether any steps were being taken by his department to safeguard the health of the drivers of motor vehicles against the danger arising from petrol fumes ; and whether he had any information in regard to the effect of petrol fumes on the general health of the public using the streets in the London area.—Lieut.-Colonel HEADLAM (Parliamentary Secretary to the Ministry of Transport) replied : As the hon. Member is aware, the possible effect of petrol fumes on the drivers and conductors of motor vehicles was considered incidentally by the departmental committee appointed by my right hon. friend, the Home Secretary, to inquire into industrial diseases. The second report of this committee has recently been issued. I do not think there is sufficient evidence of injury to the health of drivers of motor vehicles, or of other users of the road from exhaust fumes, to justify legislative action. Defects in exhaust pipes are looked for by the examiners in the examination of omnibuses and motor coaches, and similar defects in goods vehicles will come under the observation of examiners when occasion arises for the inspection of such vehicles under the provisions of the Road and Rail Traffic Act, 1933.

Mr. MCENTEE asked if any regular research was taking place into the question of the effect on the health of the public of these fumes, and whether the Minister had seen a statement issued by a number of highly qualified medical men that the fumes had a serious effect on the health of the public ?

Lieut.-Colonel HEADLAM said that the matter was under close observation. He had seen some suggestions by doctors, but they were very varied in their opinions.

### Christmas Draws for Hospitals

Mr. RAIKES asked the Home Secretary whether he would instruct police action to be taken against the Christmas draw subscription fund in aid of the Gracie Fields' Orphanage endowment fund, and the grand Christmas draw in aid of the Invalid and Crippled Children's Society and Hospital, for contravention of the law against lotteries.—Sir J. GILMOUR replied : I have no authority to give directions to the police in this matter, but if an illegal public lottery comes to the notice of the Secretary of State it is, and has for a long time been, the practice to call the attention of the responsible chie officer of police to it with a view to his considering the question of proceedings. The two schemes to which my hon. friend refers have already been brought to the notice of the police, and I understand that it is proposed to institute proceedings in both cases.

### A Dangerous Industrial Process

Mr. THORNE asked the Home Secretary the number of firms adopting the same manufacturing process as that recently discontinued by the British Celanese works at Spondon, Derby, through the intervention of his department ; and whether he had issued a warning to these firms of the risks of continuing such a process or whether he had yet considered registering the process under the Workmen's Compensation Act.—Sir J. GILMOUR replied : This process was a peculiar one which, so far as the Factory Department is aware, was exclusively carried on by this firm. The second part of the question accordingly does not arise. I will consider the third point further in the light of the results of the investigations as to the nature of the recent cases of illness : I would point out that I can only schedule a process under the Act with reference to a specified disease.

### Recruiting Standard for the Army

Mr. GORDON MACDONALD asked the Financial Secretary to the War Office the minimum standard adopted for recruiting for the Regular Army ; also the number, along with the percentage, of youths that were rejected for physical reasons during the last 12 months for which figures were available, giving separate figures for each of the Lancashire Army divisions.—Mr. DUFF COOPER replied : During the recruiting year ended Sept. 30th, 1933, 37,509 persons were rejected for physical and medical reasons, representing 52·3 per cent. of the total number of persons served with notice papers. The corresponding figures for the West Lancashire recruiting zone were 4465 and 68·1 per cent. and for the East Lancashire zone 6169 and 72·5 per cent. The minimum height, weight, and chest measurements vary according to the age of the recruit and the corps which he wishes to join. In the case of the infantry of the line the minimum height is 5 ft. 4 in., the corresponding minimum weight (at 18 years of age) 115 lb., and the minimum chest measurement 33½ in.

TUESDAY, DEC. 12TH

### Overcrowding in Scotland

Captain RAMSAY asked the Secretary of State for Scotland what was the estimated number of persons living in overcrowded conditions in Scotland ; and what was the estimated percentage of this number that would be affected in the next five years by schemes so far submitted by local authorities.—Mr. SKELTON (Under-Secretary of State for Scotland) replied : There is no general or statutory standard of overcrowding in Scotland. According to the Census Returns of 1931, however, there were 697,469 persons, or 14·9 per cent. of the population, living more than three persons to a room. As regards the latter part of the question, the programmes submitted by local authorities show the numbers of houses proposed to be erected to abate overcrowding without detailing the numbers of persons affected, and I regret therefore that the information asked for is not available.

Replying to Miss HORSBRUGH, Mr. SKELTON said that the programmes were not due for submission until the end of the month, but he understood that they were coming in very well.

### Milk for School-children

Mr. GORDON MACDONALD asked the Parliamentary Secretary to the Board of Education the quantity of milk supplied to school-children by the Lancashire County Council, specifying the quantity of free milk, the number of children provided for, and the number receiving free milk in 1930, 1931, 1932, and up to the latest date for which figures are available in 1933.—Captain HUDSON (Lord of the Treasury) replied : Figures for the calendar years are not available. The figures for the financial years are as follows :—

| Financial year ended 31st March. | Number of pints of milk provided. | Number of individual children who received milk. |
|---|---|---|
| 1931 .... | 228,976 .... | 1,525 |
| 1932 .... | 211,913 .... | 1,876 |
| 1933 .... | 394,717 .... | 2,916 |
| Period from April 1st, 1933, to Oct. 31st, 1933 .. .. | 305,542 .... | —* |

* The number of children who received milk under the Local Education Authority's arrangements during the period from April 1st to Oct. 31st, 1933, cannot be given, but the largest number of children receiving milk in any one month was 2848 in April, 1933.

All the milk provided by the Local Education Authority is given free of charge. It is understood that in addition to the authority's arrangements under the Education Act, 1921, there is in operation in the area a voluntary self-supporting scheme for the supply of milk to children on payment, conducted under the auspices of the National Milk Publicity Council. No figures are available as to the number of children receiving milk under this scheme or the quantity of milk provided.

# PUBLIC HEALTH SERVICES

## Medical Treatment of L.C.C. Hospital Staff

THE practice of the M.A.B. was to provide out-patient treatment for its resident staff and such in-patient treatment as was available in the Board's hospitals. Sick officers did not make any payment for maintenance or for the attendance of the Board's ordinary medical staff, but made some contribution towards the fee of any specialist called in. Since the M.A.B. was merged in the L.C.C. its central public health committee have been considering general principles in dealing with the sick staff of all the institutions under its management. Their recommendations, made with the concurrence of the finance committee, may be briefly summarised thus. Staff actually resident shall receive free of charge in-patient treatment at any of the L.C.C. hospitals, and such out-patient treatment as can be provided at the particular hospital; but a medical superintendent would, however, be charged for his board. The consultant and specialist resources of the L.C.C. are available either in the hospital where the officer is employed or to which he is referred. Tuberculosis treatment is to be provided in accordance with the L.C.C. tuberculosis scheme. Treatment of any sick officer is to continue only so long as the medical superintendent considers that benefit is likely to come of it; free treatment does not include the provision of dentures, spectacles, or appliances, except such as are required during in-patient treatment.

Non-resident staff, on the other hand, are to be responsible for their own medical treatment, out-patient treatment being provided in cases in which the medical superintendent is of opinion that it would be to the Council's advantage. When the officer receives special treatment at an L.C.C. hospital, the public health committee has to consider the question of a contribution. In no case is the treatment provided to be construed as an admission of liability on the part of the L.C.C. or as a right to treatment.

Medical superintendents of general hospitals under the L.C.C. are authorised to act as the panel doctors of the resident insured staff in their respective hospitals, and a principal medical officer in the public health department is authorised to act as the nominal panel doctor for resident insured staff at the special L.C.C. hospitals.

## INFECTIOUS DISEASE

### IN ENGLAND AND WALES DURING THE WEEK ENDED DEC. 2ND, 1933

*Notifications.*—The following cases of infectious disease were notified during the week: Small-pox, 3 (last week 6); scarlet fever, 4013; diphtheria, 1449; enteric fever, 37; acute pneumonia (primary or influenzal), 981; puerperal fever, 46; puerperal pyrexia, 107; cerebro-spinal fever, 21; acute poliomyelitis, 8; acute polio-encephalitis, 2; encephalitis lethargica, 6; dysentery, 9; ophthalmia neonatorum, 76. No case of cholera, plague, or typhus fever was notified during the week.

The number of cases in the Infectious Hospitals of the London County Council on Dec. 5th–6th was as follows: Small-pox, 11 under treatment, 2 under observation (last week 8 under treatment); scarlet fever, 3227; diphtheria, 2194; enteric fever, 17; measles, 489; whooping-cough, 168; puerperal fever, 15 mothers (no babies); encephalitis lethargica, 255; poliomyelitis, 6; "other diseases," 208. At St. Margaret's Hospital there were 10 babies (plus 4 mothers) with ophthalmia neonatorum.

*Deaths.*—In 118 great towns, including London, there was no death from small-pox, 2 (0) from enteric fever, 20 (1) from measles, 14 (1) from scarlet fever, 6 (1) from whooping-cough, 49 (10) from diphtheria, 41 (14) from diarrhœa and enteritis under two years, and 59 (8) from influenza. The figures in parentheses are those for London itself.

Birkenhead and Bristol each reported 1 death from enteric fever. Manchester reported 5 deaths from measles, Barrow-in-Furness 4, Leeds 3. Of the fatal cases of diphtheria, 7 occurred at Leeds, 4 at Tottenham, 3 each at Hull and Leicester. Four deaths at Liverpool were attributed to influenza.

The number of stillbirths notified during the week was 263 (corresponding to a rate of 48 per 1000 total births), including 43 in London.

# Medical Diary

***Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.***

## SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
TUESDAY, Dec. 19th.—5.30 P.M., GENERAL MEETING OF FELLOWS.
THURSDAY.—5 P.M., DERMATOLOGY (Cases at 4 P.M.), Dr. H. MacCormac: (1) Pemphigus Vegetans; (2) Acute Rodent Ulcer. Dr. F. Parkes Weber and Dr. O. B. Bode: (3) Poikilodermia of the Face (Civattes Type) in a Girl aged 14½ Years. Dr. F. Parkes Weber: (4) Psoriasis Arthropathica in a Woman whose Twin Sister was Similarly Affected. Dr. J. E. M. Wigley and Dr. Gordon Heggs: (5) Urticaria Pigmentosa (with sections). 8.30 P.M., NEUROLOGY: THERAPEUTICS AND PHARMACOLOGY (Cases at 8 P.M.). Special Joint Discussion: Treatment of Subacute Combined Degeneration. Openers: Dr. E. A. Carmichael, Dr. C. C. Ungley, Prof. E. Mellanby, and Dr. William Sargant.

HUNTERIAN SOCIETY.
MONDAY, Dec. 18th.—8.30 P.M. (at Simpson's Restaurant, Bird-in-Hand-court, Cheapside), Dr. E. P. Poulton and Dr. C. W. Morris: Discussion on Therapeutic Uses of Oxygen. Preceded by dinner at 7.15 P.M.

CHELSEA CLINICAL SOCIETY.
TUESDAY, Dec. 19th.—7.30 P.M., Dinner at the Hotel Rembrandt, Thurloe-place, S.W., followed by Discussion on Hypnotic Suggestion, to be opened by Dr. A. G. Buchanan (with demonstration).

NORTH-WEST LONDON MEDICAL SOCIETY.
TUESDAY, Dec. 19th.—9 P.M. (at the Regal Rooms, Finchley-road, N.W.), Mr. R. Y. Paton: The Painful Back.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL NORTHERN HOSPITAL, Holloway-road, N.
TUESDAY, Dec. 19th.—3.15 P.M., Mr. Eugene Wolff: Iritis.

LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, 49, Leicester-square, W.C.
TUESDAY, Dec. 19th.—5 P.M., Dr. H. Corsi: Diseases of the Nails.
WEDNESDAY.—5 P.M., Dr. I. Muende: Histopathology of the Chronic Infective Granulomata of the Skin.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
TUESDAY, Dec. 19th.—11.30 A.M., Dr. W. W. Payne: Treatment of Diabetic Coma.
WEDNESDAY.—9.30 A.M., Skin Clinic. 2 P.M., Dental Clinic.
THURSDAY.—2 P.M., Tonsils, Adenoids, and Anæsthesia.
SATURDAY.—9.30 A.M., Eye Clinic.
Medical and Surgical Out-patient Clinics: daily from Mond. to Sat., 10 A.M. to 12 noon. Medical Wards: mornings, 10 A.M., Mond., Wed., Thurs., and Sat.; afternoons, 2 P.M., Mond., Tues., Thurs., and Frid. Surgical Wards: Tues., Thurs., Frid. mornings, and Wed. afternoon.

LEEDS GENERAL INFIRMARY.
TUESDAY, Dec. 19th.—4 P.M., Dr. Bibby: Demonstration of Cases.

A MENTAL DEFECTIVES' COLONY IN SURREY.—The Surrey county council recently approved of a scheme for the establishment of a colony for 1200 mental defectives on the Botley's Park Estate, Chertsey. Eventually the colony will accommodate 1500 patients. Botley's Park was purchased in 1929 for £31,000 with the intention of using it for this purpose. It is calculated that by 1937 the county's mental hospitals will be full and that this building will then be urgently needed.

# NOTES, COMMENTS, AND ABSTRACTS

## HEALTH RESORTS OF THE EMPIRE

A LANTERN lecture with this title was given on behalf of the British Health Resorts Association by Dr. R. F. Fox, at the house of the Royal Empire Society on Dec. 6th. Having reviewed the characteristics of the British spas under the tonic effect of a northern insular climate, the lecturer gave some accounts of the spas and seaside resorts of the British Commonwealth. It was interesting, he said, that everywhere the original inhabitants had always made use of the hot springs and in many places still did so; they had even fought battle for their possession. Medicinal waters were numerous, but with notable exceptions little medical use was made of them.

*New Zealand* showed a bright example in the development of the spas as a national asset. Rotorua, 1000 feet above the sea, amid the volcanoes of the north island, is the most famous spa in the southern hemisphere. It has hot acid and alkaline waters, and volcanic muds, mainly for external use, and reports show that their value in rheumatic diseases of the soft tissues can be attributed to their influence upon the circulation. Since the war the government sanatorium has served for civilian cases sent up from the hospitals. Not far from Rotorua on the coast is Te Aroha, with an alkaline water not found elsewhere in British possessions. Hanmer, in the south island, has gaseous thermal waters, and another government sanatorium. As elsewhere, there has been a great movement to the sea in recent years. Attractive seaside resorts are springing up, such as those near Auckland and, in the south island, Marlborough Sands, Kaikoura, and the Terakoke Beach at Nelson. New Brighton and the Summer Beach at Nelson are among the best surf-bathing centres in the world. Popular lake-bathing resorts are also growing up among the mountains and lochs of this island.

The subcontinent of *South Africa* possesses a very sunny and (lying between two oceans) a very temperate climate. As in the case of New Zealand the visitor from Europe arriving in November avoids the northern winter, and may enjoy three summers in immediate succession. This radical change of season may be of considerable importance in breaking the vicious circle of chronic disease. Among numerous spas *in posse* Caledon has a very uncommon hot iron-water in beautiful surroundings near Capetown. Until the opening of the Suez Canal, Caledon was much visited by officials returning by the Cape from the East. Aliwal North, also in the Cape province, and warm baths near Pretoria are also spas of much interest and at high altitude. The coast resorts are more and more frequented for surf- and sun-bathing, especially Muizenberg and those of the "Cape Peninsula," Port Elizabeth, East London, and Durban. The warm Mozambique current makes the sea in these parts pleasantly warm and safe for invalids.

*Canada* has many delightful pleasure resorts, and the visitor is invited, as in England, to "come north for health," but there are few places for convalescence with recuperative treatment. Banff, in Alberta, has the making of a great spa. Many hot springs exist in British Columbia, and Harrison springs, Halcyon, and Radium are considerably frequented, and provision made for the Indians coming to the hot pools. Other springs of medicinal value are St. Catherine's and the Caledonia springs in Ontario, and the salt and sulphur springs in Quebec. Many summer coast resorts are to be found in the maritime provinces to the east, especially St. Andrews-by-the-Sea in New Brunswick. There is also much lake-bathing in Canada as at Port Dalhousie or Ontario. On parts of the Pacific coast to the west the climate is much like that of the west of England, and well adapted for an open-air life in the winter months—for example, at the attractive Capital Victoria on the southern extremity of Vancouver Island.

## STERILISATION IN THE HOME

Dr. O. Neustätter has sent us the November issue of a quarterly magazine entitled *Gesundheitsdienst*, issued by the life assurance office of which he is scientific director.[1] The quarterly, as can be seen from the cover which we reproduce in miniature, is intended to reach the family circle; this issue is presumably to enliven the fireside at Christmastide. The leading article is entitled "Biology of Heredity," and it begins by pointing out how in the past the care of health was limited to the principle of avoiding harmful influences on the living, but has now taken a wider aspect since, in consequence of the war and of the low birth-rate, the more valuable sections of the community are being more and more displaced by the less valuable. Of the two great objects of racial hygiene—namely, the elimination of the bad constitution and the encouragement of the good—it is the latter to which "with prompt decision" the

National Socialist Government is said to have turned its attention by enacting the law for the prevention of hereditary disease, which comes into force on Jan. 1st, 1934. For fear that this law should become a dead letter through conflict with sentiment the compelling force is not left to the caprice of individuals. But it is not to be regarded as a dishonour or punishment, since there is to be no sterilisation without a proper hearing in a court of law, and the criminal with hereditary disease is expressly excluded. In the past, he says, only two methods of prevention were known: (1) lifelong internment, (2) castration; but the "epoch-making work of Steinach" has shown a way to prevent the germinal cells from reaching their destination by a trifling operation. That the method presents no difficulty is deduced from the fact that in America 16,066 persons (6699 men and 9067 women—the figures do not seem to add up quite right) have submitted to it and the number of States that have taken it up is already 27 and still increasing. Sterilisation by radium or X rays has been discarded in Germany because the result is doubtful and there is the risk of damaged offspring. Officials and social workers are stated to be almost unanimous in regarding the operation as an act of progress; many of them regret that its execution is to be kept within such narrow limits when it is destined to check the flood of mental and spiritual misery in the future. Nor does Dr. Neustätter

[1] Deutsche Zentrale für Gesundheitsdienst der Lebensversicherung E. V., Berlin-Schlachtensee, Seestrasse 43.

hesitate to set out the material gain which he foresees :—

"If the idealistic result is the first thing, it must not be overlooked what tremendous economic advantages are to be expected from the sterilisation of the less valuable persons in Germany, estimated by Tirala at about 412,000 in number. They may be classified somewhat as follows: 200,000 defectives, 80,000 schizophrenics, 20,000 manic-depressives, 60,000 epileptics, 600 sufferers from hereditary chorea, 4000 from hereditary blindness, 18,000 from hereditary deafness, 20,000 from severe inherited deformities, 10,000 from severe alcoholism. If we succeeded by means of this law in diminishing the present number of the mentally ailing even by 60 per cent., we should achieve in 35 to 40 years a saving of at least 420 million marks. Over and above this there would be an end to the cost of bringing up the mentally and physically defective children, which would begin to make itself felt after six years. That would in 30 years mean a further saving of some 1·5 milliards of marks."

No one, Dr. Neustätter concludes, can close his eyes to the significance of this law which is expected ultimately to achieve results as yet undreamed of, and not to be attained by our previous methods. But it is a pity there will be no one by the German fireside to tell these earnest young eugenists what the British Association for the Legalisation of Eugenic Sterilisation has told the public here: that a large number of defectives come into the world as a result of the union of two people apparently normal in themselves but carrying the hereditary factors which cause mental defect; and that the rate at which the race can be purged of this inborn and carried factor must be comparatively slow, even though defectives themselves are prevented from breeding.

## NEW PREPARATIONS

WE have received from Messrs. Burroughs Wellcome and Co. (Snow Hill Buildings, London, E.C.) specimens of two new products from their laboratory.

1. TANNAFAX for the treatment of burns is a tannic acid jelly, non-oily and non-greasy, and has a water-soluble antiseptic base. It can easily be bathed off when necessary without the pain which is associated with oily or greasy preparations, and, owing to the fact that it is ready for immediate application, it has an advantage over tannic acid solutions which, to be of value, must be freshly prepared. The want of the necessary facilities at the time may render this precaution impossible or, at any rate, may lead to delay. The spreading of the tannic acid spray is apt, too, to endanger the eyes when the burn is on the face. In use the new preparation should be spread lightly and allowed to dry before covering it with a bandage, but it is advisable to dispense with bandaging. The black coagulum readily peels off, leaving a clean normal surface. In all cases the dressing should be repeated until the surface has ceased to be moist and red; the coagulum should be black and formed.

2. PROCAINE AND ADRENALINE PRODUCTS.—Each tabloid contains procaine hydrochloride 0·02 g., adrenaline 0·0001 g., sodium chloride 0·009 g., and a solution can be readily made in the barrel of the syringe. The anæsthetic has been found valuable in surgery, especially in reduction of fractures.

ENDRINE (Petrolagar Laboratories, Ltd., Braydon-road, London, N.) is a nasal injection for the treatment of catarrh, asthma, and hay-fever, and may be of especial service for use in the first stages of the common cold. It contains the alkaloid ephedrine, extracted from *Ephedra helvetica*, which under the name of Ma Huang has been the subject of much investigation in China and Japan. According to the Extra Pharmacopœia the drug has 5000 years of history behind it. Ephedrine is combined here with camphor, menthol, and eucalyptol in an oily base, and the result is a mild astringent, reducing nasal congestion and promoting sinus drainage. It is supplied in 1 oz. bottles with a drop applicator.

## WHITAKER'S ALMANACK

THE claim that a vast amount of information respecting the Government, finance, population, commerce, and general statistics of the various nations of the world is included in Whitaker's Almanack is not exaggerated.[1] The index contains 25,000 references, and even those who have occasion to make frequent use of the almanack hardly realise its immense scope. It has been recommended, alternatively with Bradshaw, as a bedside book, but here it would probably fail of its purpose because every section exercises a stimulating rather than a soporific influence. Opening the volume casually at intestate estates, we learn from tables how the distribution of an estate between widow, parents, children, and further relatives, even as far as uncle on the mother's side or deceased son's child, varies greatly between England and Scotland, and in Scotland between "movables" and "heritage." To sleepless doctors the possible medico-legal application of these tables might assume immense importance. Whitaker's Almanack, though not calculated to induce slumber, is nevertheless an acceptable gift for almost anyone. Some of us are fascinated, for example, by the list of the winners of the Ashburton shield since its institution in 1861; others will find interest in the study of all the past awards of Nobel prizes respectively for physics, chemistry, medicine and physiology, literature, or peace; others again will learn of close times and seasonable fish. In the information bearing on medicine we can find little to criticise; medical fellows of the Royal Society are not so common that the honour conferred on one of them should be ignored (p. 411), and the list of charges usually made by general practitioners and consultants requires revision (p. 364).

## RADIOGRAPHY OF ARTERIOVENOUS ANEURYSM

THE use of the radio-opaque salt thorium dioxide (marketed as Thorotrast) for visualising various organs on the X ray film and screen is increasing. W. M. Yater and C. S. White [2] report a case of arteriovenous aneurysm in which the sac and adjoining vessels were successfully shown in a photograph. The aneurysm was a sequel to a buckshot wound and involved the ulnar artery near the bend of the elbow and a neighbouring vein. Ten cubic centimetres of the opaque salt solution was injected into the brachial artery, without anæsthetic, distal to a tightly drawn tourniquet. After the injection the tourniquet was loosened for a moment to distribute the thorotrast and then retightened, radiograms being taken immediately. The picture obtained shows the structure very clearly and would no doubt give valuable information as a preliminary to operative treatment.

## BOOKS FOR CHRISTMAS

THE OVER-DOSE.—On the half-title page of her new Dose book [3] Miss Joyce Dennys puts the regrettable statement that "this really *is* the last one." Be that as it may, her present account of the doings of Dr. Gargle, Dr. Potassium, Mr. Ottomey, Dr. Kathleen Glucose (not to mention her partner Dr. Lydia Lysol), Dr. Emulsion, and the rest of them is a very pleasant affair, very wittily illustrated. Miss Dennys, in the last chapter, admits that she herself is a doctor's wife—indeed, she claims to be one of those "who actually never have done anything a Doctor's Wife should not do"—and most of her stories have the sting which only an inside outsider could successfully inflict on our profession. Whether the book ought to be read by other doctors' wives is of course doubtful. But it would certainly be unkind to keep it from them.

LONDON TREASURY OF NURSERY RHYMES.[4]—Mr. J. Murray MacBain, associate editor of *Child*

[1] London: J. Whitaker and Sons. 1934. Pp. 1000. 6*s*.
[2] Amer. Jour. Med. Sci., October, 1933, p. 493.
[3] The Over-Dose. By Joyce Dennys. London: John Lane the Bodley Head, Ltd., 1933. Pp. 155. 5*s*.
[4] London Treasury of Nursery Rhymes. Collected by J. Murray MacBain. London: Univ. of London Press. 1933. Pp. 323. 5*s*.

*Education*, has collected an immense number of nursery rhymes and given them an index of titles. The publishers make them very easy to read and the book is a convenient work of reference for the nursery. But it must be admitted that most of the rhymes, if they are to come to life, need the musical or dramatic intervention of a well-informed nurse or mother. Some in fact, with origins far away in distant symbolism, are so obscure that it is hard to see how they have survived at all. Perhaps, on the other hand, the symbolism makes a universal, if unconscious, appeal; so that London children, for whom this anthology is intended, are linked through their responses with those of rural England long ago.

MOODS AND TENSES.—Dr. Harvey's stories [5] deserve to be better known. The first of this series, the Double Eye, describes the unhappy case of a man whose eyes saw different things. "The single-minded man may laugh and be cheerful but it's not often that he has a sense of humour. He lacks stereoscopic vision. Both eyes see from the same angle instead of from a slightly different angle. Probably the first time that Adam laughed was when he sat munching the apple and was conscious of good and evil at the same time." Dr. Harvey's friend, who is supposed to have written the stories which follow, developed a definite and somewhat sinister diplopia, and his tales vary accordingly from grim to gay. Both eyes see further than most of us, and their impressions are recorded very skilfully. The book is full of charming conversation, and when murder is meditated there is an appropriate lightness of touch. "George Cranstoun remembered the pictures he had seen of methods of rescuing the drowning. The method that appealed to him most was that in which the rescuer, swimming on his back, supported the head of the drowning person with his hands and held it just above the level of the water. In this case it would be just below."

[5] Moods and Tenses. By William Fryer Harvey. Oxford: Basil Blackwell. 1933. Pp. 224. 5*s*.

## Appointments

FITZGERALD, W. E., M.B., Ch.B. Edin., D.P.H., has been appointed Medical Officer of Health and School Medical Officer, Southport.

FORTY, F., M.B., B.S. Lond., F.R.C.S. Eng., Resident Surgical Officer, General Hospital, Birmingham.

JONES, A. TREVOR, M.D., B.S. Lond., D.P.H., Medical Officer of Health, Carmarthen.

*Queen Charlotte's Maternity Hospital:* BUDDEE, F. W., M.B., Ch.M. Syd., Senior Resident Medical Officer; SUGDEN, E. C., M.B., Ch.B. Camb., Assistant Resident Medical Officer; EVANS, HELEN M., M.R.C.S., L.R.C.P. Lond., and FURLONG, BERYL M., M.B., B.S. Lond., Resident Anæsthetists.

*London County Council Hospital Staff.*—The following appointments, promotions, and transfers are announced. A.M.O. (I.) and (II.) = Assistant Medical Officer, Grades I. and II.

ROBINSON, N. H., M.D. Melb., F.R.C.S. Eng., A.M.O. (I.), St. James'.
GORE, J., M.B. Birm., F.R.C.S., A.M.O. (I.), St. Giles'.
BROWN, J., M.B. Edin., F.R.C.S. Edin., A.M.O. (I.), St. Olave's.
FERRIMAN, D. G., B.M. Oxf., A.M.O. (II.), St. Pancras.
SMITH, D. B., M.D. Toronto, A.M.O. (II.), St. George-in-the-East.
PORTEOUS, R., M.B. Edin., A.M.O. (II.), Constance-road Institution.
KAHAN, A., M.B. Lond., A.M.O. (II.), Queen Mary's, Sidcup.
JOHNSON, W. A., M.R.C.S., House Physician, St. James'.

Certifying Surgeons under the Factory and Workshop Acts: MONTGOMERY, G. N., L.R.C.P. Lond., M.R.C.S. (Bicester, Oxford); PRINGLE, A. F., M.B., Ch.B. Aberd. (Lerwick, Shetland).

## Vacancies

***For further information refer to the advertisement columns***

*Ashton-under-Lyne, District Infirmary.*—H.S. At rate of £150.
*Bolton Royal Infirmary.*—H.P. £200.
*Brighton, Royal Alexandra Hospital for Sick Children.*—H.P. £100.
*Bristol General Hospital.*—H.P.'s., H.S.'s, &c. At rate of £80. Also Cas. H.S. At rate of £100.
*City of London Hospital for Diseases of the Heart and Lungs.*—Anæsthetist.
*Croydon General Hospital.*—Hon. Anæsthetist.
*Harrogate, Royal Bath Hospital.*—Res. M.O. At rate of £156.
*Hertford County Hospital.*—H.S. At rate of £200.
*Hospital of St. John and St. Elizabeth, 60, Grove End-road, N.W.*—Res. H.P. At rate of £100.
*Huddersfield Royal Infirmary.*—Res. Surg. O. £225–£250.
*Hull Royal Infirmary.*—H.S. to Sutton Branch Hospital. At rate of £160.
*Ilford, King George Hospital.*—H.S. At rate of £100.
*Lincoln County Hospital.*—Jun. H.S. At rate of £150.
*Liverpool Hospital for Consumption and Diseases of the Chest, Mount Pleasant.*—Hon. Surgeon.
*London Hospital, E.*—Asst. Surgeon.
*Macclesfield General Infirmary.*—Second H.S. £150.
*Maidstone, West Kent General Hospital.*—H.P. and H.S. Each £150.
*Manchester Ear Hospital, Grosvenor-square, All Saints.*—Res. H.S. £120.
*National Temperance Hospital, Hampstead-road, N.W.*—Hon. Asst. Physician. Also Hon. Asst. Aural Surgeon.
*Nelson Hospital, Merton, S.W.*—Res. H.S. At rate of £100.
*Newcastle-upon-Tyne, Royal Victoria Infirmary.*—Two Res. Anæsthetists. Each at rate of £100. Also H.P.'s and H.S.'s to Spec. Depts. Each at rate of £50. Also 2 H.S.'s to Leazes Hospital. Each at rate of £50.
*North Middlesex County Hospital.*—Jun. Res. Asst. M.O. £250.
*Nottingham Children's Hospital.*—Res. H.S. At rate of £150.
*Portsmouth Royal Hospital.*—H.P. At rate of £130.
*Preston and County of Lancaster Royal Infirmary.*—H.S. Also Special H.S. Each £150.
*Prince of Wales's General Hospital, N.*—Hon. Clin. Assts. for Spec. Depts.
*Queen's Hospital for Children, Hackney-road, E.*—Physician for Skin Dept.
*Rochester, St. Bartholomew's Hospital.*—H.S. At rate of £175.
*Royal Free Hospital, Gray's Inn-road, W.C.*—Res. Cas. O. At rate of £150.
*Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.*—Clin. Asst. for Ophth. Dept.
*St. Thomas's Hospital.*—Med. Reg. to Children's Dept. Also Surg. Reg. and Tutor.
*Salford Royal Hospital.*—Hon. Ophth. Surgeon.
*Sheffield Royal Infirmary.*—Two H.S.'s, H.P., Ophth. H.S., Asst. Cas. O., and Asst. Aural and Ophth. H.S. Each at rate of £80.
*Sheffield, Winter Street Hospital.*—Asst. Tuber. O. £30.
*Southport County Borough.*—Deputy M.O.H. and School M.O. £600.
*Stoke-on-Trent, North Staffordshire Royal Infirmary.*—Orthopædic H.S. £150.
*Surrey County Mental Hospital Service.*—Jun. Asst. M.O. £350.
*Taunton, Taunton and Somerset Hospital.*—H.P. £100.
*University College Hospital, Gower-street, W.C.*—Ophth. Reg. £100.
*Wakefield Mental Hospital.*—Med. Supt. £1200.
*West London Hospital, Hammersmith, W.*—Res. Anæsthetist. At rate of £100.
*Wolverhampton and Midland Counties Eye Infirmary.*—H.S. £150.
*Woolwich and District War Memorial Hospital, Shooter's-hill, S.E.* H.P. and H.S. Each at rate of £100.
*York, The Retreat.*—Sen. Asst. M.O. £400.

The Chief Inspector of Factories announces a vacant appointment for a Certifying Factory Surgeon at Rainham, Essex.

## Births, Marriages, and Deaths

### BIRTHS

BARNARD.—On Dec. 4th, at "Aboyne," Sidcup, the wife of J. N. Barnard, M.B., B.S., of a son.

BUNCOMBE.—On Dec. 7th, at a nursing-home, Norwich, the wife of Dr. G. H. Buncombe, Gorleston, Suffolk, of a son.

COOPER.—On Dec. 5th, 1933, at Hillcrest Cottage, Weeping Cross, near Stafford, to Ruth Mildred (née Evans), the wife of Thomas Valentine Cooper—a daughter.

### MARRIAGES

NEWSOM—CLAY.—On Nov. 29th, at Christ Church, Lancaster-gate, Robert Augustus Newsom, M.R.C.S., L.R.C.P., to Eleanor, daughter of the late Bertram Clay, I.C.S., and of Mrs. Galvin.

### DEATHS

EARLE.—On Dec. 4th, at Woodstock-road, Oxford, John Rolleston Earle, M.A., M.B., aged 69.

LODGE.—On Dec. 5th, at Harrogate, Samuel Durham Lodge, F.R.C.S., of the Drive, Roundhay, and "Creskeld," Greystoke, Cumberland.

ROWLANDS.—On Dec. 7th, at Wimpole-street, W., very suddenly, of heart failure, Robert Pugh Rowlands, O.B.E., M.S., F.R.C.S., Senior Surgeon of Guy's Hospital.

***N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.***

MENTAL HOSPITAL APPOINTMENTS IN YORKSHIRE.—The West Riding hospitals board have appointed Dr. Arthur Pool, deputy medical superintendent and senior assistant physician at the Retreat, York, to be medical superintendent at Wadsley; and Dr. R. C. Walker, deputy medical superintendent at Menston, to be senior medical superintendent at the same institution.